

# SUPPLEMENT.

## The Mining Journal, RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[The MINING JOURNAL is Registered at the General Post Office as a Newspaper, and for Transmission Abroad.]

No. 2463.—VOL. LII.

LONDON, SATURDAY, NOVEMBER 4, 1882.

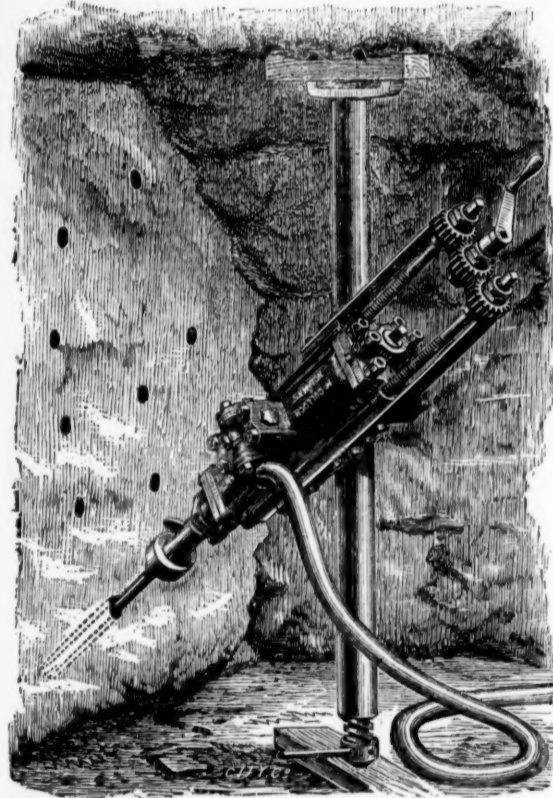
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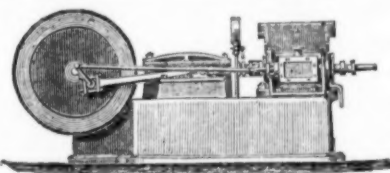
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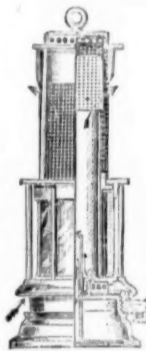
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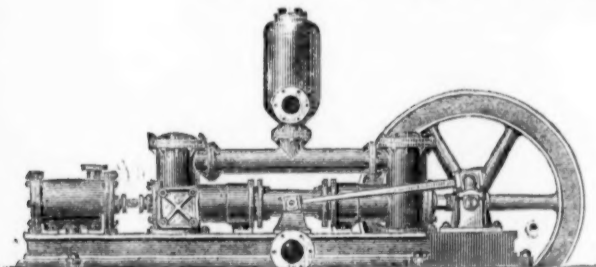
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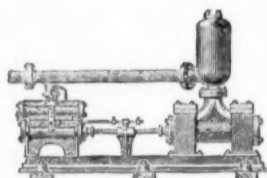
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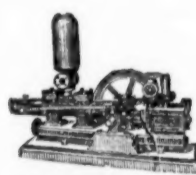
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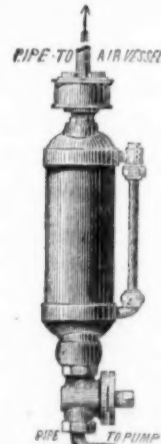
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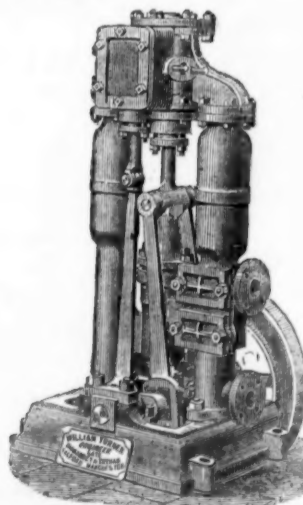
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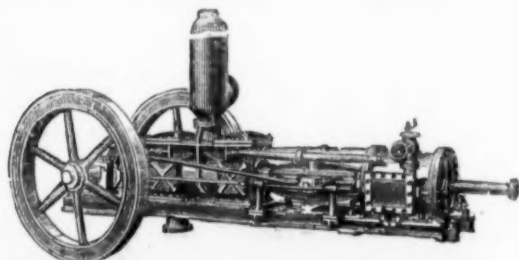
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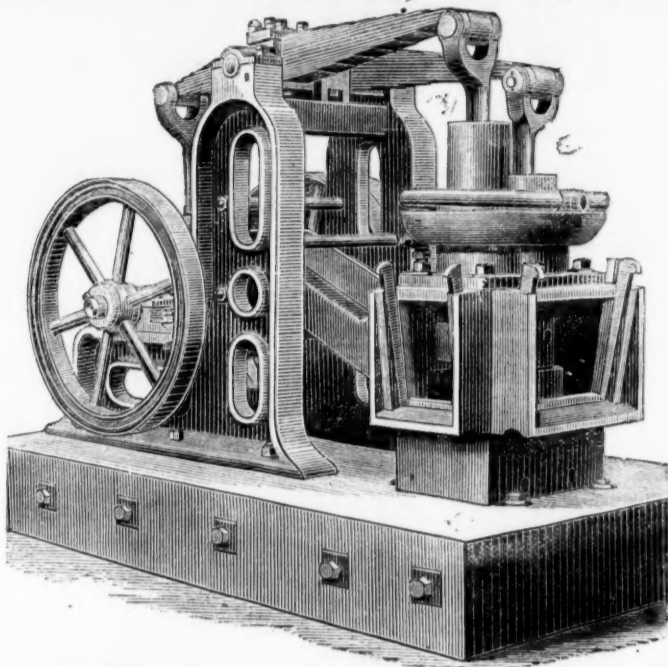
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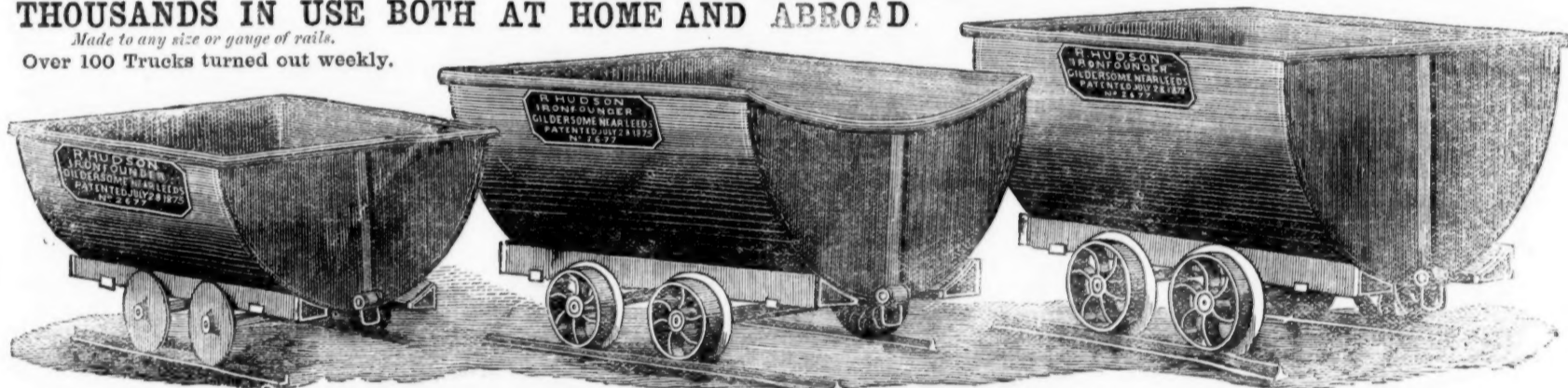
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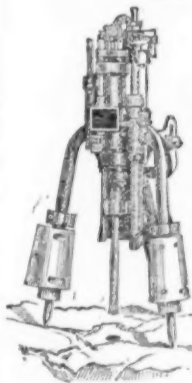
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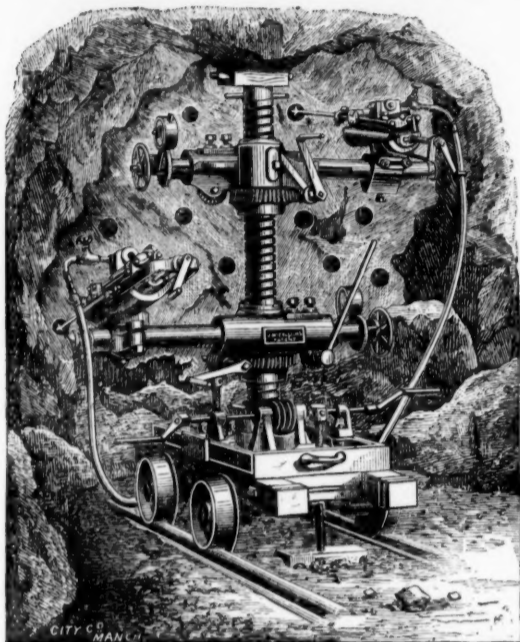
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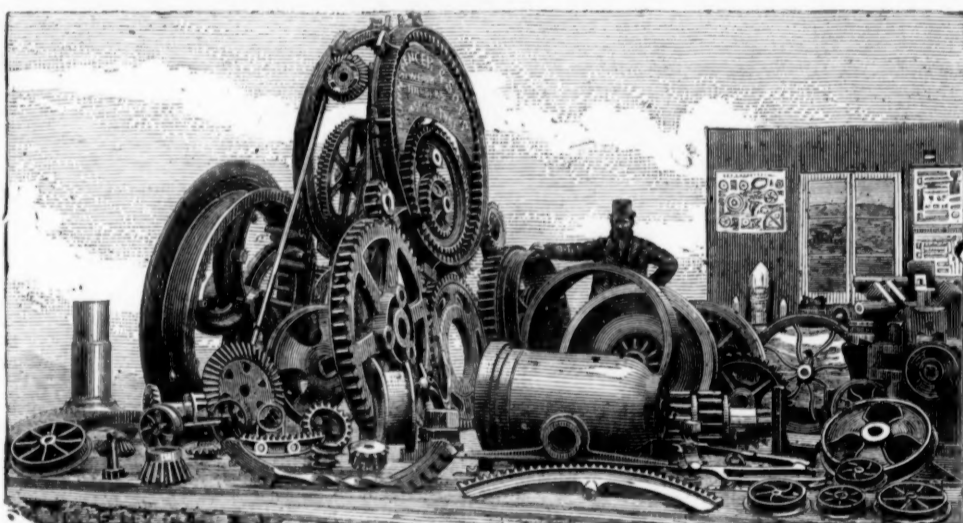
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MINING ENGINEER.

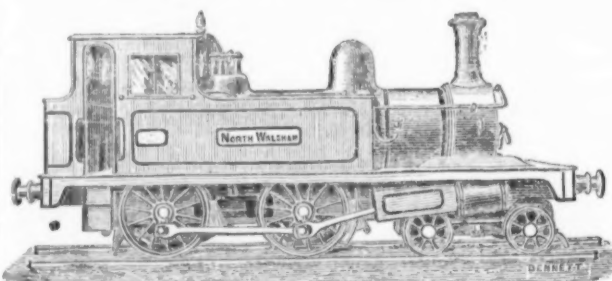
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## A TRIP TO COLORADO—No. IV.

BY THOMAS CORNISH, M.E.

Author of "Gold Mining, its Results, and its Requirements."

Rico, the name of what has been termed the coming great mining camp of Colorado, is a Spanish word for "the rich," is a thriving little town of about 2000 inhabitants, snugly situated in a pretty little valley on the Dolores river, amidst a cluster of mountains which tower several thousand feet above the valley, and whose hidden treasures are being explored, and in many instances successfully developed in every direction. The beautifully clear and crystal stream which now courses its way through the valley, fed by the many mountain springs and streamlets, will no doubt soon change its colour when the smelting and reduction works get fairly to work on the vast deposits of silver ores contained in the surrounding mountains. Rico is about 45 miles north-west of Durango, and is reached by a stage coach from Rockwood; the road is rough and hilly, making it difficult and expensive for heavy freightage, and no little energy and skill have been displayed by the teamsters who have successfully delivered the machinery already erected in the place. The first part of the road is worked by a four-horse stage, and the second by six horses. To climb round the mountain sides and to successfully navigate the circuitous and dangerous tracks requires the guidance of a careful and experienced whip, for an error in judgment, or a display of reckless driving, might soon precipitate the stage, horses, and passengers tumbling over the mountain sides, with little chance of escape from death or serious damage. The sooner a railway is constructed either from Silverton or some other point along the line the better will it be for the passengers to and from, as also the general prosperity of Rico. Having climbed over the big dividing range, from whence a most extensive and magnificent view of the surrounding country and snow-capped peaks can be obtained, a gradual but steep descent takes place till the Dolores Valley is reached. Before entering the town my attention was drawn to two graves near the roadside, and as I was informed contained the bodies of two men who had been hanged by a vigilance committee. These precious scoundrels, having committed some depredations, were about to be arrested by the City Marshal, who, no sooner than he went to their hut for that purpose and opened the door, was shot dead. The murderers made a bolt out of the town along the main road, and stuck up the first team they met, and taking the two leaders galloped off into the mountain fastnesses; the dreadful work was done so suddenly that the wretches got a good half-hour start before any of the citizens had time to saddle their horses and mules and ride after them. The hue and cry having been quickly raised, some 40 well-armed and determined neighbours were soon in the saddle following the trail of the villains, who, through the difficulties of the country, were enabled to elude the pursuit of the followers for vengeance for several days, and were only found through the aid of some friendly Indians. When discovered they were taken back to the town, and after a very summary jurisdiction and examination were hung to the rafters of some building then being erected. Justice was short, sharp, and decisive, and has had the effect of keeping the town and district remarkably quiet ever since. This is the kind of law that oftentimes has to be administered in new mining camps and settlements where no formally or effective police force exists. As a rule, it has a most salutary effect, and is the only means by which the rowdy element generally to be found in new camps or settlements can be kept in subjection. Lynch law, as a rule, is not to be commended, but when a mixed society is thrown suddenly together, as is the case in new mining camps long distances away from any settled towns or districts, and before the red tape of official government has been established, the honest and respectable members of society in such camps and settlements are oftentimes forced to adopt stringent measures for their mutual protection.

Attention was given to the riches of the district in 1879, and in August of that year received its name of Rico, since then a considerable amount of work has been done in developing the resources of the mountains, the laying out and building up of a nice little town. It was only in March, 1881, that the inhabitants finding it highly inconvenient to do their official business with the county seat town, 75 miles away, presented a petition to the State Legislature for the new county of Dolores to be formed, which was duly granted, and Governor Pitkin at once appointed the first county officers, and Rico being appointed the county seat has also its duly appointed city officers, including mayor, clerk, treasurer, trustees, surveyor, and marshal.

The first county assessment showed \$355,000 worth of taxable property, and which is expected to be doubled in the next assessment and if the officers will give special attention to improving the means of vehicular communication, or prevail upon the directors of the Denver and Rio Grande Railroad to extend a branch of their line to Rico, they will be doing that which will most readily and materially improve the value of the property and increase the population.

The altitude of Rico is about 8653 ft. above sea level, and the surrounding mountains will average about 12,000 ft. The weather in summer is delightful; but the winters are cold, and a considerable quantity of snow falls in the district, sometimes to such an extent as to stop the coach traffic and teamsters, and preventing the prospecting of mines except where the shafts or tunnels have been well covered in.

The geological formation consists mostly of layers of limestone and sandstone, much broken up and disturbed, and at many places with porphyry. The mountains immediately surrounding Rico are the Expectation, the Elliott, Nigger Baby Hill, the Dolores, and Telescope mountains, all of which are being mined on more or less, and some of them with excellent prospects of success. It is stated there are several thousand prospects and locations in and around the camp, many of which are of a promising nature, and likely to make Rico famous as a rich silver mining district. The veins generally are varied in their character, some crossing the formation, and so far as developed may be termed fissure veins. Others again are nearly flat, and called blanket veins, while the Johnny Bull Mine, which is a very rich one, takes the character of a huge chimney, or the cone of a volcano filled with various kinds and grades of ore, the extent of which no opinion can yet be formed. It is situated at an elevation of about 10,000 ft., at the head of Horse Gulch, on the divide between East and West Dolores, from whence there is an extensive view of large portions of four States—Colorado, New Mexico, Arizona, and Mexico.

The ore in this mine is unlike any in the camp in its general character, consisting as it does, of sulphurets, chlorides, and black oxide of copper, and large quantities of grey copper, carrying silver and gold. The results from milling and of assays have been very high in silver and gold—in fact, from some published accounts of the mine the prospects obtained have been of the marvellous kind. Lower down the Horse Gulch is situated several mines of a most promising character, including the Whale, the Modoc, the Alma, the Boulder County, the Legal Tender, the Afton, Undine, &c.; and lower down the gulch at the foot of Expectation Mountain, is the well-known Puzzle Mine. It was thus named because the mineral was found in a little hillock or hog-back at the foot of the mountain, and puzzled the location as to whether it was a slide or a solid formation. My own impression is that it is a slide from off Expectation Mountain, and that the continuance of the rich mineral vein of ore that they have been working will be found by tunnelling into the mountain. The richest ore is a black sulphuret, which I am informed has milled as high as over 1000 ozs. of silver per ton. The general bulk average of the large quantity that has been sent to the smelters has averaged from \$100 to \$500 per ton. The position of the company's mine is favourable for tunnelling into Expectation Mountain, and intersecting the numerous veins of mineral ore permeating through that mountain, and if the works are pushed on expeditiously they will in all probability soon cut the vein at considerable depth, from which was thrown off the big slide that formed the hillock on which the Puzzle Mine is located, and which has produced such excellent returns. This mine is held by English capitalists, whose intention is to explore the treasures of Expectation Mountain by tunnelling

through it, and intersecting the numerous lodes at great depths—the most practical way of economically developing and profitably working large mining properties. A tunnel cutting through this mountain will have from 1000 to 2000 ft. of backs to work on all the veins the owners may develop, and my impression is that Expectation Mountain will be found equally as rich in mineral as any other mountain in the district.

The Newman group of mines, situated on Dolores Mountain, half a mile from Rico, just above the surveyed line of the Denver and Rio Grande Railway, consists of the Newman, Chestnut, Swansea, Swansea Extension, and Stephen's Mines, and has more real practical development with better prospects than any other group of mines I saw in the district; the tunnels in the several claims have cut and driven a considerable distance on a big body of rich ore in a blanket vein. An excellent true fissure vein has also been cut that intersects the flat vein, and a winze sunk on it about 65 ft. I went down this shaft and found an excellent body of ore. The owners of this valuable group of mines have organised a joint-stock company, and have erected smelting works at the foot of the mountain, called the Rico Smelting Company. The ore will be sent down a box chute on the mountain slope direct from the tunnels, and by a short tramway to the works, thereby saving considerable expense in working. Much credit is due to the proprietors for the thorough practical way they have opened the mine, and laid out their works. The company also holds an extensive coal mine a few miles north of the town, with coke-ovens, &c., which will enable them to smelt their ores at a very moderate cost. The following returns of ore sent to the smelting works at Denver, Golden, and Rosita were furnished me by Col. J. R. Crooke, the resident superintendent, and Mr. J. G. Taylor, jun., secretary. Total 1322 tons 1505 lbs., value \$208,216.02, or \$157.42 per ton. There is also a large quantity of rich ore stored in the ore-houses waiting for the smelting works to be finished, and from the several mines now well opened the works can be constantly supplied with ores of high grade. The Newman group of mines, combined with the Rico Smelting Company, including coal mine, coke ovens, &c., is an important and valuable property, and the results of its future operations will be watched with interest.

The Grand View Smelting and Mining Company have completed the erection of some large smelting and reduction works for reducing and smelting the ores from their own and other valuable mines in the Telescope Mountain. The Santa Clara Smelting Works have also been lately completed. These are situated near the junction of Horse Gulch with the Dolores river near their valuable mines in Nigger Baby Hill.

The energy displayed by the enterprising owners of the three large smelting works in the town of Rico is commendable, and the fact that not only their own valuable mines, but numerous others in the district had been well prospected was sufficient justification to warrant their erecting these extensive works. There can, however, be little doubt but that they can be kept in full work, and the results from their operations will induce capitalists and mining companies to erect substantial works on the spot instead of shipping their ores such long distances under heavy freight charges as they have hitherto been compelled to do.

There are a number of other valuable mines in the district which time did not permit my visiting, nor have I space to particularise; amongst the most prominent may be mentioned the Wabash Company, an extensive mining property on Telescope Mountain, containing an immense body of ore of low grade, said to be 90 ft. in width, and considered one of the largest bodies in the State. The works at the mine are of a substantial character, and reflect credit on the management. The Consolidated Mining and Milling Company possess several valuable properties. The Edith Mine, on Nigger Baby Hill, owned by Messrs. Kelly and Gardner, is developed by a drift and winze, sunk on a good vein, with well defined walls, will, I think, develop into an excellent mine. The St. Louis, the Bancroft, the Sundown, the Puzzle Extension, and the Rico Mountain Mining Company are working some ten mines. The Little Sadie group, on the Dolores slope of Mount Elliott, includes the Little Sadie, Wall Street, Zurilda, and El Paso—all fissure veins. The Monitor, Monitor Extension, the Clifton, the Sindbad, the Index, the Little Susie, the Little Maggie, the Iron, the Caesar, the Columbus, the Little Etna, and many others; some of these mines are near the mountain tops, difficult to climb up to, others on the sidings and in the gulches. Where mines are opened near the tops of the mountains, or high up the sides, I should suggest to the owners the laying down of box shutes, so that they can send down the ores to the creek levels for cartage to the mills in winter as well as in summer. The saving of labour, and the advantage of working lower grade ores, will well repay them for the first cost of construction. These shutes can be made by felling and splitting the pine trees growing on the mountain sides. This section of the San Juan county, like all other high altitudes of the Rocky Mountains, is for the most part covered with snow during the winter months, necessitating the laying in full supply of stores of provisions, powder, tools, and all necessities for mining; but where the shafts and entrances to tunnels are well and substantially covered in and stocks of firewood and mine timber duly provided there is nothing to hinder development work being carried on in the mines throughout the winter months, except those with their works exposed.

The mineral mountains around Rico offer an excellent opportunity for the judicious organisation of capital and labour to develop them thoroughly, by the construction of large tunnels through the mountains, to intersect the veins at great depths, instead of so much scattered labour and capital being devoted to prospecting on veins round the sides and on the tops of the mountains. The district offers a good field for the judicious investment of capital, and will materially add to the production of bullion to the world's capital by the State of Colorado.—*New York, Sept. 23.*

## MINERAL RESOURCES OF COLORADO—GILPIN COUNTY.

The great mining exposition in Colorado has redirected the attention of capitalists to the enormous wealth of Gilpin county. It appears that, though the smallest county in Colorado, it has, up to January of the present year, produced no less than \$35,500,000 worth of gold, and it has been stated by high authority that from an area of less than three miles square within its territory more gold has come than from any district of like dimensions in the world. Be this as it may, since its first settlement, only 23 years ago, this little county has produced more than \$40,000,000 worth of bullion. But let no one, says the Denver News, think that this is wholly owing to the natural superiority of her mines. It takes something more than "true fissures," strong veins, or even rich ores to make great and long-lived mines. It takes some of the best qualities of humanity as well—hope and courage, faith and energy, pluck and perseverance, intelligence and patience. These qualities characterised the earliest pioneers of Gilpin county, and, under the law which governs the colonisation of new countries—the nucleus attracting homogeneous elements—like qualities have continued to characterise her citizens to this hour. The deepest mines in the State are in Gilpin, not because other counties have no veins which it would pay "to go down on," but because Gilpin county has a class of miners possessed of the indiscoverable determination requisite to go down through when necessary, hundreds of feet of "cap rock" and barren gangue in search of lost pay until it is found. The largest stamp-mills in the State are here, not because there is lack of free milling ore in other localities, but because the intelligence and executive ability were here to mine and mill ores upon a large scale at a small profit per ton, but a large one per year. Colorado owes a debt of gratitude to Gilpin's men even more than to her mines. The former have demonstrated what the latter were capable of doing under careful—not cowardly—management, in reward for honest labour and legitimate risk of capital, rather than as a basis for confidence games and gambling operations.

The Gilpin County exhibit occupies at the Denver Exposition the largest space allotted to any mineral display upon the floor, and near the centre of the northern wing. Its windows open toward the range, and from them are visible, towering above the green foothills, and even above the great mountains "with heart of gold" about Blackhawk and Central—Gilpin's majestic peaks, already

white with early autumnal snows. This space has been fitted up "regardless of expense," with a grand canopy of artistic design; having carpeted floors, rich hangings of maroon, blue and gold, handsome screens, decorated walls, and elegant show cases for the richer specimens of gold, and the even more valuable as well as more beautiful minerals drawn from the dark recesses and depths profound of the deepest mining region on the eastern slope. To the connoisseur of minerals and the man of science they are immeasurably more interesting and attractive. Here are specimens of pure or native gold whose great intrinsic value is multiplied many fold by their variety of form and mode of occurrence, and specimens of iron and copper ores made precious as gold itself and far more beautiful, through like accidents of shape or chemic combination. Here are huge crystals of common quartz so pure and perfect that they rival the diamond in lustre, and others whose fine texture and splendid colouring make them prizes for the lapidary and collector of precious gems. Besides them are collections of various minerals—tetrahedrite, enargite, barite, stephanite, siderite, galenite, and numerous other ites whose beauty and interest lie chiefly in the rare perfection of their characteristic crystalline forms.

The spacious floor is almost buried under piles of precious ore, large enough to be coveted as dump piles for many a mine of great down east pretensions, and more valuable than the total contents of some which have been stocked "way up in the millions." Near the centre two huge pyramids of Gilpin's characteristic ore, glittering with auriferous iron and copper pyrites, galena, and zinc blende catch the eye of the visitor at his first approach, and draw him irresistibly to a closer examination. His astonishment increases as he looks around. Here is a colossal mass weighing more than 10,000 lbs., raised from a depth of 100 ft. on the Tierney lode—solid, free milling gold ore. There is a huge chunk of peacock or iridescent copper pyrites, the largest specimen of its kind ever taken out of the ground, one of whose faces, more than a yard square—rivals the rainbow in beauty and brilliancy of colouring. On every hand is "wealth and splendour," pile on pile, such as the story tellers of Arabia dreamed of, but only the realistic pioneer of the occident has brought to actual light.

About eighty different mines are represented, and these are but a fraction of those contributing to the world's wealth from Gilpin County. The gold ore produced at present is divided into two classes, known as milling and smelting ore. The latter, constituting about 4 per cent. of the total production, is said to carry on an average 3 ozs. of gold, 10 ozs. silver, and 5 per cent. copper, and at present prices will net the miner a little over \$60 per ton. The milling ore, including tailings, brings the miner on an average over \$5 per ton net. The total yield of the precious metals for Gilpin County for 1881, when some of the largest producing and best mines were not being worked, pending change of ownership, was \$2,158,730.

## GOLD AND DIAMOND MINING IN SOUTH AFRICA.

SIR,—In my last letter I pointed out that, in my opinion, 36,000/ was a fair price for the Beaconsfield Company's ground, and if they be able to work regularly I have no doubt they could pay from 25 to 30 per cent. per annum on that capital for six or seven years, after which their returns would be more uncertain. But I do not think they will be able to work their ground regularly for at least 18 months. The South-East Company's ground is shown on the plan as 10,800 square feet. The actual area being about 8400 square feet, which at a depth of 300 ft. will be reduced to about 6500 square feet. A fair value for this ground would have been about 65,000/., an amount on which it is capable of paying from 20 to 30 per cent. per annum for a great number of years provided the company are not troubled with falling reef. This ground was put into a company at 111,000/. The treacherous reef at the back of the South-East Company's claims is as bad as in any part of the mine, and I think the promoters are to be blamed for not mentioning this liability in the prospectus. Their manager is a very hardworking industrious man, and amongst his other qualifications he is able to fight any member of the Mining Board, of which he also is a member.

The Rose Innis Company's ground is shown on the plan to be over 15,500 square feet, but the promoters taking into consideration the fact that a large amount of diamond formation had cut out in depth only put into the company about 10,200 square feet. This is about fair, but the price is much too high.

If this company's ground had been put into the company at about 100,000/ instead of 207,750/., there would not have been much to complain of. The Rose Innis is capable of paying from 25 to 30 per cent. per annum on my valuation for a great many years, but they made the same mistake as the South-East Company in not mentioning the reef liability in their prospectus.

The Standard Company, according to the plan, holds about 32,000 square feet; but the promoters, allowing for the ground which has cut out in depth, put in only about 22,500 square feet, which at a depth of 300 ft. will be reduced to a depth of 18,000 square feet. The whole of this company's ground was put in at 225,000/. Now, if it were not for the reef liability, 200,000/ would not be much up or down a fair price; but taking into consideration the large amount of reef frontage of this company, I cannot place their reef liability at less than 40,000/., or 160,000/., as the actual value of their ground; an amount on which it is capable of paying from 25 to 30 per cent. per annum for very many years. In placing this company's property before the public it was doing an injustice to the mine not to mention the reef liability.

The North-East Diamond Mining Company shows on the plan about 7200 square feet, but allowing for what has been cut out by the reef, I estimate their present holding at about 2800 square feet, which I value at about 28,000/.; on which it is capable of paying about 25 per cent. per annum for a few years. This ground was put into a company at 65,000/., and up to the present has been continually hampered with fallen reef. I will refer to the Barnato and British Companies in my next letter, and will particularise the whole of the companies before I leave this place, which I hope will be before long.

I must again refer to the fact that no person who has ever written a letter to your valuable Journal has written more *pro bono publico* than I have during the last 12 months, and if my advice had been more extensively adopted throughout the diamond fields, Kimberley would to-day have been one of the most flourishing mining camps in the world.

I maintain, as I have ever done, that Griqualand West is the richest known country for diamonds on our globe, and there has not been a tithe of the diamond mines discovered in this neighbourhood that there will be. Your readers may rely on what I say, the time is very near at hand when another mine, or rather mines, with prospects as good as Kimberley will be opened. People with large stakes in the older mines may do all in their power to prevent the development of the new ones, but it will be of no avail. However, holders of good ones need not be alarmed, because good ground will always give a good account of itself, and the sooner the bad things are wound-up the better it will be for all those concerned in honest diamond mining.

The information I have given you from time to time has been borne out by positive facts. I have never been influenced by personal feeling in anything I have written, and I challenge any person to point to a single sentence which is not strictly correct, although hiring pens have sometimes tried to do so. You, Sir, will remember that I stood alone in foreshadowing the present depression, and had to withstand an avalanche of abuse for so doing. I saw that the avarice of a clique, and the maladministration of the ruling powers, was sapping the very vitality of the only industry which has rendered South Africa commercially notorious and affluent. I saw a few influential scoundrels who had tripped on their own cupidity, endeavouring to assume a vertical position at the expense of their more honest neighbours and the public generally. I saw that attempts were being made to foist on the public ground of no intrinsic value, while ground that was known to be almost fabulously rich was so heavily handicapped that dividends could only be the result of a miracle. I saw a Mining Board whose office was made the arena where individual interests were fought over, instead of attending to the general interest of the mine, and whose incompetent officers were destroying the mine they were employed to secure. In calling

attention to the above facts I have been animated by a desire to benefit South Africa generally, and this place in particular.

I have continually called attention to the stupid manner in which the reef was being removed, and have always pointed out the places where large falls were to be expected. In my letter of March 2 I wrote—"On Sunday there was another serious fall of reef. It buried the claims of the Standard Company, and I am of the opinion that this is merely the prelude to one of the greatest falls of reef ever seen in the Kimberley Mine, and from which all the companies east of the Central must suffer." From that time to the present I have called attention to this matter, and I regret to say that yesterday week my worst anticipations were more than realised. The whole of the east end of the mine is on the move, cracks have appeared under the diamond buyers' offices, and the whole street is moving down into the mine, and has already reached the eastern claims of the Central Company. The "comet finders" are trying to invent a little earthquake to account for this slip; but, as a fact, many of the cracks have been visible for 18 months, and have been showing several inches broad the whole of that time. It is hard on some good companies.

I have always warned people against going to the new gold fields. They are a gigantic fraud. Upwards of 150 men have returned to this place from the so-called gold fields during the past week, weather-worn and disgusted.—*Kimberley, Oct. 3.* CORRESPONDENT.

#### MYSEORE REEF GOLD MINING COMPANY.

SIR,—Can any member of this company who assisted Col. Blair to oppose Messrs. Harvey's operations to recover our money say what is being done with this amalgamation scheme? It was disappointing enough to myself and to many other shareholders that this scheme obtained a majority of votes, for it seemed to us the death-knell to our hopes. Messrs. Harvey's intentions were well meant, and well directed, but a majority of the shareholders have frustrated them. Are these prominent holders, who replaced a vigorous and ardent acting committee, really and personally seeing, as the other side would have done, that the plan, which they declared and voted as an improved one, is being properly shaped and carried through for the benefit of the company, or are they leaving things to shape their own course? So far I have not heard one word of what is being done, and having several hundred pounds at stake I desire to know whether those holders who wrested the power out of able and willing hands, are going to save some portion of this money for me, as I believe Messrs. Harvey would have done, or if it will all be lost? The least they can do is to inform us what they are really doing. W. P. S.

*Sheffield, Nov. 2.*

#### THE NEW CALLAO.

SIR,—I am glad to see that "W. H. P." virtually concedes what I endeavoured to prove in the Journal of Oct. 21—that Mr. Skerchley's report did not warrant anyone in stating that he placed the position of our property in the "immediate vicinity" of El Callao. "W. H. P." attempts to reconcile his statement in his previous letter with the extracts I quoted from Mr. Skerchley's report by now saying that being unacquainted with Venezuela he could suppose the conformation of the district might have caused a very wide detour for a good cart road to the neighbouring mines from the same port of entry.

But surely we must take Mr. Skerchley's words as they stand, and not endeavour to make him responsible for our suppositions. At the very beginning of his report he shows El Callao to be in the Caral district, and thereafter he is continually insisting on the fact that we are near Bolivar, in a different range, and in a more healthy district. Nothing could be more explicit. "W. H. P." seems disposed to treat the petition very lightly, but I can assure him it has been a most serious matter for the company in the indirect damage it has caused. I think there is very little doubt that but for it we should have the pleasure of sending him a dividend warrant by this Christmas.

*Bishopgate-street, Nov. 1.*

T. J. WARNER, Sec.

#### GOLD MINING IN INDIA AND IN AUSTRALIA.

SIR,—The subjoined from the *Times* of Tuesday will possess a double interest for many of your readers, as showing the great value and the duration of quartz mining (for reef mining at Sandhurst began in 1854), and as showing that Mr. Brough Smyth is a man of some reputation, a prophet of some honour, even in his own country.

After reading as to the deep mining, and the great saving in time and in money by using the diamond drill, the question already asked recurs with greater force, why do not the Indian companies go in for drilling and deeper mining? The Mysore Company, with its great strength—in directorate, management, and capital—is even yet, and that with all their knowledge, gained by actual working in the field and from the reports of practical miners (such as Bell-Davies, and others), that deeper mining at these fields is necessary, only at the paltry depth of about 150 ft.; yet they long since found—and now all the Colar-Mysore companies find—old workings at a greater depth than had been anticipated or was thought possible; and it was known that at depths under the 80 ft. level water was met in quantity, and notwithstanding that knowledge even now we hear of work being stopped in the deeper shafts in consequence of the rush of water. What have the companies been thinking of that they have not drills at work and pumps at hand ready for use? In at least three of the mines in that district, under the 80 ft. levels, reefs with the highly auriferous dark grey quartz with coarse-grained gold—the pay shoots—have been struck; but delays have been and are constantly incurred because additional pumping power has been required.

Then, in the Wynad, are none of the companies going to try the value of their reefs at depth?—1200 ft., 1500 ft., even 2000 ft., are not extraordinary depths for quartz reef mining in Australia, and more particularly in California—are all simply driving adits? Why will not the directors get stone in hundredweights, or in tons even, with its pyrites, and have the value tested here? Not by assays which, as a rule, are utterly valueless, but by actual working; the ordinary stamping, and with ordinary quicksilver, will not do; it has not—in any one case—yet done; it is easy to save the pyrites, but the pyrites and other sulphides render the mercury impure, and foul the plates, and only a part, and that a very small part, even of the free gold, is taken up; and besides, in the stamping process—with mercury rendered impure, as an inevitable and almost universal result—much mercury is lost, and all that is lost carries away gold with it. That gold from the mines in India is in some cases being got, and in many more will be got in paying quantity, is now a proved fact, even though we have not got the 500 or 6000 ozs. which are to set doubts entirely at rest. That as greater depth is attained and more work is done the industry will pay magnificently, and will be permanent, I have never doubted.

A. HAY ANDERSON, F.R.G.S.

*London, Nov. 2.*

Most of the readers of the *Times* will remember the discussion which a year or so back took place in the London Press on the, by some persons, apprehended gold famine. There seems to be little prospect of this at present, so far as the Australian gold fields are concerned. I have in former letters stated that the diamond drill was working a revolution in mining. Before the use of this instrument the only means of exploring at great depths was by sinking a shaft, which frequently cost many thousands of pounds without a profitable result after all. The diamond drill goes through the hard rock with a rapidity which enables a miner to do in hours what it took days to do by the older processes. Much new deep ground is now being tested in this way, especially in the Sandhurst and Cresswell districts; and with a success beyond even the sanguine hopes of miners. Mr. Brough Smyth, formerly secretary to the Victoria Mining Department, and who, after a prolonged official engagement on the Indian gold fields has recently returned to this colony, thus writes to the *Argus* an interesting account of a recent visit to our Sandhurst district:—

"The reader can judge for himself of the productiveness of this district. The yields of gold at Sandhurst for the first seven months of the past three years, as compiled by the receiver and paymaster, from returns furnished by the banks, are as follows:—

	1880.	1881.	1882.
January.....	Oz. dwt. gr. 12,956 14 13	13,113 8 0	10,577 2 18
February.....	12,831 10 13	16,392 5 0	12,278 9 11
March.....	13,456 13 11	14,026 8 14	12,918 12 20
April.....	11,349 9 0	13,123 13 0	14,279 11 4
May.....	15,272 15 14	14,332 8 14	18,322 14 4
June.....	14,402 10 18	15,087 15 5	18,585 11 5
July.....	14,433 13 2	17,097 17 4	18,777 11 13

"Separate accounts of the gold got from quartz and the alluvia are not kept, but it is estimated that 1000 ozs. monthly of the above is alluvial and the rest reef gold. The large and regular increase is encouraging."

Now, this increase of which Mr. Smyth writes, it will be seen on examining the

above table, is very marked in the months of April, May, June, and July of the present year, the diamond drill being now very commonly employed. In the Kimberley district enormous yields are being obtained from great depths, and mining enterprise is becoming as rampant as ever it was in the palmy days of 1852 and 1853.

#### ALMADA AND TIRITO SILVER MINE.

SIR,—Permit me to trouble you with a few remarks. The 25th half-yearly meeting of shareholders is called for the 10th inst., at the office of the company, Finsbury-circus, to receive usual reports, &c., and transact routine business. But nothing is said about a dividend, although the net divisible profit for half-year ended June 30 last is about 9600*l.*, and no dividend has been paid since May, 1876. When there were no profits the directors kept accumulating a fictitious depreciation fund by making entries at debit of profit and loss account each half-year, the result being that at Dec. 31, 1881, there was a debit balance against the profit and loss account of 6900*l.*, all of which the directors now propose to pay off out of the half-year's profits. As a holder of 470 shares I object to this course, and have given formal notice of moving a resolution declaring a dividend. I will go to London to attend and move the resolution, and get some dividend if only of 6*d.* a share, which would only absorb 3250*l.* declared, and if necessary I may take steps by injunction in Chancery, to restrain the directors from applying all the profits to a depreciation fund. Sections 29 and 30 of the Articles of Association provide that such a fund is to be created only out of profits, and not more than 1-20th of any one year's profits is to be set apart for such a fund; and Section 182 provides that whenever the profits of the company permit there shall be a dividend every half-year. Will shareholders kindly give me their support by letter to me, care of Messrs. Snell and Greenip, George-street, Mansion House, London? *Ducan-street, Dublin, Nov. 1.* J. H. HOGAN.

#### BRITISH MINING ENTERPRISE IN BRAZIL.

SIR,—May I ask a little space in the *Mining Journal*, and the liberty of criticising a communication published two weeks since under the head—"St. John del Rey Mining Company—The King of Gold Mines." I think the writer of that article was a "bull" of the stock which he attempts to put up by a series of expectations, suppositions, and rather wild calculations. I have followed the fluctuations in the price of the stock of the St. John del Rey Company for the past three years, reading all that has been said in the *Journal* touching the condition and prospects of the company's mines. I was in Brazil when someone wanted to "bear" the sacred stock of this old company, and supposed that if the real condition of the mine were to be generally known the stock would be more plentiful, when fluctuations in price would give operators (especially himself) an opportunity to do a little honest mining on the Stock Exchange, or, in other words, to deal in it.

I have become not only interested but conversant with this subject, although too timid to operate even on the result of the observation and knowledge of the "bull" who has for 30 years (with intermissions) been a shareholder—that is he has been in and out; or of the "bear" who occasionally publishes some ugly facts. I fail, however, to see which is the most sinful, "bear" trying to get holders to sell if they would on a knowledge of the real condition of the mine, or "bull" trying to get them to buy by such an array of figures representing expected profits, and such a fine mining romance of profits on tailings, and fabulous prices for stock. This "bull" who has been for nearly 30 years a shareholder (with occasional intermissions) should now be loaded up with stock, believing as he does that dividends will be 101,200*l.* a-year, and stock will sell at 400. This is a "point." This in California is called a "deal," and the newspapers warn the public to "stand from under" when points are given out, as the wicked brokers out there unload, and then prices decline.

But let me speak of some mistakes in calculations. The St. John del Rey Company receive for September 23,500 oits. of gold, value 9,106*l.* The expenses at the mines must have been over 9000*l.*, as published profit is 1000*l.* Has Chinese labour helped to run up their expenses. Even should October produce be 30,000 oits. and expenses not increase (but expenses do increase) the calculation of a profit of 4000*l.* is far out of the way, as we shall soon see. Does this "bull" know what percentage of Chinamen were hanging about the hospital of the company? Is he sure that the case of the Cata Branca slaves has been settled without loss to the company? The advocate of the slaves, Dr. Jacinto Dias, does not say so. Does he not know that the expert who has been experimenting and trying at Morro Velho and Cuiba to save more gold has failed, and is clearing out? Does he not know that the yield from 450 tons of Cuiba ore is a far greater average than they get when a larger quantity of stuff is milled. I begin to think that "Investigator" is not inside the "ring," if there is a St. John del Rey "ring." The letter I keep before me, and I may refer to it again. I like to see fair play for "bull" and for "bear."—*City, Oct. 31.* INVESTIGATED.

#### MINING PROGRESS IN NORTHERN MEXICO.

SIR,—This section of Mexico promises very shortly to fulfil Baron Humboldt's prediction, that, when developed, its product of treasure will astonish the world. Owing to its sparse population, distance from the populous districts of Central and Southern Mexico, and more especially to the plague of savage Indians, mining progress has been greatly retarded in Durango and the neighbouring States. The latter troubles are now happily over for ever, the Indians are all good—i.e. dead; and the difficulties of distance are being daily lessened by the construction of excellent railways, under concessions from the Mexican Government, which, as prime conditions, fix the maximum rates for passenger fares and carriages of goods at about one-half those charged in England, absolutely forbidding any discrimination in rates in favour of one party over another. As a direct consequence of these improved conditions, mining in Durango has waked up from its lethargy, and in every "mineral" or mining district in the State are to be found new mills, furnaces, machinery, and, more important than all, new men possessing capital and skill. So far the new comers are Americans, who are eagerly buying up the best mines, and after a few years when they have skimmed off their cream will generously sell the milk to Englishmen, and repeat the game they first played in Nevada, and are now trying with Colorado mines. In one aspect they are right in this, for it is but fair that the men who are sufficiently enterprising to take hold first in a new field should reap the harvest of success. Why, therefore, should not English mining men come in now and share in the good things? Why let our American cousins gather the crop, and leave only the gleanings for us?

Mining as an industry has been the business of Mexico for two centuries, hence skilled miners are plenty, wages cheap (2*s.* to 3*s.* sterling per day), fuel for boilers, furnaces, &c., abundant, and to be had for chopping and hauling, water-power in many places to drive machinery, climate in Durango unexceptionable, never too hot or too cold, no snow or ice, no fever, malaria, or consumption, food of all kinds abundant and cheap, fruits plenty, and, most important to miners, veins of rich ore numerous and permanent, true fissures of great strength and persistency, which will last for a century of exploitation, not Leadville pockets which give out in a few short months. Among the multitude of good properties, it is difficult to single out the best; indeed, that is a question only to be solved by work and time. But the districts which are most to my liking (after a full survey of the State) are Guancavei and Vaca Ortiz or Metates. The average yield of all the ores now worked by patio process at Guancavei is over 80 ozs. of silver and 4 ozs. of gold per ton (2000 lbs.) while such mines as La Sirena, Quebradillas, Tecolote, Nuestra Señora, and Providencia yield ores of 300 to 3000 ozs. silver per ton, with pay streaks of 3 to 6 ft. wide of such ores, opened on 200 to 300 ft. deep for distances of several hundred feet. Two mines in this district have this year been yielding 8000 weekly profit each, and occasionally that much daily profit. If they can do this with horse-whims and patio, what are they not capable of with steam hoists and mills in the hands of energetic and skilful miners?

At Metates or Vaca Ortiz is the famous Candelaria mine, which was discovered some 20 years ago, and since then has a bullion record of over \$7,000,000. It has till within the last month been in

the possession of Mexicans, the managing man of whom glories in the statement that during these 20 years he had never lived one sober day. It is estimated that this mine has to-day above tunnel level over \$60,000,000 of ore, and below an unknown and inestimable quantity. Its southern extension has an equal amount. The lowest grade ore found in this mine yields 94 ozs. silver per ton, and the average yields are from 300 to 600 ozs. silver per ton, with occasional bonanzas yielding up to half its weight in silver. Connected with it is a water-power hacienda or mill, equipped to work ores of all kinds, by patio, pan amalgamation, lixiviation of hyposulphite process, and by smelting. The river can furnish water-power to work 1000 tons of ore daily, and the mine and its southern extension, when fairly opened up in a miner-like way, can yield that quantity. About three or four miles north of this mine are found three more excellent properties—Zacatecas, Barranca, and Recompensa, close to the river. They yield ores of 80 to 300 ozs. silver per ton in strong veins of 6 to 15 ft. wide of pay ore. About a league S.W. of Candelaria is another good mine, Santo Nino, yielding ores of 100 ozs. silver per ton, with a 6 ft. vein of ore. Such are some of the properties to be had at present in Durango, and if English capitalists would buy mines of this class from first hands they would own dividend properties for many many years, and at comparatively reasonable prices. To do this they must come or send to see for themselves, and make their selections and bargains on the spot, as the Americans do. The native owners are content to work along, and certainly never will go in search of buyers; they know what their mines are, and that sooner or later buyers will come to them. GEORGE WILSON, M.E.

*Vaca Ortiz, Oct. 19.*

#### RAILWAY GOODS AND MINERAL TRAFFIC SUPERSEDED BY THE ENDLESS RAILWAY TRACTION ENGINE SYSTEM

SIR,—The *Times* of Oct. 26 contains a leader upon a lengthened article—"The Lancashire Plateway"—from their Liverpool Correspondent. I deem it in consequence not inopportune to recur to, and if I may be permitted to descend to a rather inelegant but expressive colloquialism to follow up with vigorous attention to detail and lucidity of exposition, my contributions on the important subject of cheap transport in the *Journal*, permeating the industries most benefited by a reduction, penetrated with the conviction that the system I promote will supplant all but long distance passenger and express goods transit by railway, burdened as these are with an enormous deadweight for preliminary, legal, and parliamentary expenses, purchase of land, permanent way, and maintenance, stations, without reference to cost, useless lines worked at great loss, unproductive capital, ruinous canal policy, &c., of which my system, now in process of formation for coal transport, is devoid. On the average of the railways of the United Kingdom there has, since 1854, been an increase of 40 per cent. in the volume of traffic per mile, but so far from there having been a corresponding increase in net profit, the latter has been nearly stationary. In 1860 the net earning on capital was 4.19 per cent., and in 1881 4.27 per cent. In order to obtain the mean return of 4½ per cent. on capital, which is all that the English railways have attained since they laid embargo on the canal traffic, the normal rates of charge must be as follows:—

For passengers per ton per mile, 10-18 <i>d.</i> , each 0-6 <i>d.</i>	
" goods " " " 1-16 <i>d.</i>	
" minerals " " " 0-83 <i>d.</i>	

These proportionate rates are arrived at by charging equal amounts of profit on equal working costs; but sound rules of book-keeping, which can never be neglected with impunity, rather prescribe the allotment of proportion to the time, and therefore to the capital employed in earning equal gross revenue, by equal weights of the several kinds of traffic. Were it not trespassing too far upon your valuable space I could adduce proof of this failure to derive increased profit from increased volume of traffic being due to the fact that railways convey minerals at the expense of passenger traffic, &c. The Edinburgh Review, commenting on Sir Henry Tyler's general report on the Railways of the United Kingdom, states: "It lies with the railways companies to disprove, if they can, the inference of a loss on coal traffic by the publication of details, in the absence of which no railway proprietor can tell what is being done with his property." The Midland conveyed passengers on Bank Holiday from Birmingham to Scarborough, return, 346 miles at a penny for 5-76 miles, in which the excursion contractors, Messrs. Cook, participated, reducing the Midland rate to perhaps a penny for ten miles, if we may draw a conclusion from their antecedents, their contest with the Great Northern resulting in a joint loss of £300,000 per annum *vide Times* of June 5, 1871, City Article, their shares consequently upon the action of the Great Northern falling from £190 to £32. Evidence before the Select Committee on Railways shows the Great Western, in order to secure traffic, invested one million of capital on which they made something like cent. per cent. loss per annum. The Manchester, Sheffield, and Lincolnshire Railway Company, with the deplorable return for their expenditure of two millions on the Grimsby Dock property, actually levy a rate of upwards of 2*d.* per ton per mile on coal to the destination of London, say from Denaby to the extent of their lead, simultaneously with the Aire and Calder Navigation in same coal field charging, including steam haulage, less than a farthing for identical weight and distance. The Great Northern persistent heavy loss on their canal exploitation, similar to what I have instanced of the Great Western, is appalling, so that combined with their Sutton Dock deplorable speculation and unproductive capital, the lugubrious and desponding language of their Chairman, at a recent meeting of shareholders, may be the forerunner of a more direful future. "All that we can do, he stated, is to endeavour to bring the ship (railway) into harbour with as little damage as possible, which is all we can hope for." The whole railway system is destined to crumble to pieces, and that most assuredly before a multitude of confiding investors, trustees, widows, orphans, &c., can realise the imperious and urgent impending necessity of a *saave qui puit* before a cataclysmic sets in. In Liverpool the rate now levied by railways is 7*s.* 6*d.*, which in 1860 was 2*s.* 6*d.*, and which, by my system, can be effected for 1*s.* The evidence of the Chairman of the London and North-Western Railway Company, the general manager now director of the Midland, the general manager of the Great Northern, the Chairman, as well as the general manager of the Great Eastern, holding for a lengthened period an important position in the Midland, shows the impossibility of railways competing with water carriage, and I am supported by the evidence of the very highest authority in asserting they never will. It is well known the working cost of transport by rail is infinitely more than by canals, which latter cannot compare with ocean transit, not restricted to cargo capacity as on canals. To attain an amelioration of the exorbitant cost of transport with which the industries and commerce of the kingdom are maled, it is indispensable to resort to means beyond the control of Parliament. To enlarge upon the existing railway influence therein, the material for effecting which I have at hand, ready for future action, would require much larger space than is compatible with *brevitance* on my part to occupy.

The system I advocate is beyond their jurisdiction, and to attempt to obtain a concession from the Legislature to construct a plateway in competition with the vast railway accommodation from and to Liverpool will result in certain discomfiture and great loss. The Chairman of the committee on the Great Eastern (Northern Extension) Railway Bill, in putting question 10,192, stated: "It cannot be pretended to say that all the railways in the country are to be superseded, or rather not to have any consideration given to them for the capital they have expended." There is an inconceivable amount of dormant mechanical power waiting to be utilised, and it is only the unthinking who would dare to restrict dynamical operations in the skilled hands of engineering science, or set bounds to the transforming enterprise to be accomplished by Nature, which, as far as the ponderous article of coal, has done all that could be expected of her in respect of water transport for this country. The *Times* leading article of March 21, 1878, contained a letter from the able and experienced author of the "Index to our Railway System," in which he states: "It can be proved to demonstration that all the coal carrying trunk lines are in greater or less degree on the road to ruin, the earning power of their capital is gradually dwindling away, a high rate of expenditure maintained by reason of unprofitable work a d

profits diminishing. The Railway Service Gazette of April 5, 1878, and Fraser's Magazine contains equally alarming observations, for instance in the October issue, 1878, there is an article, "The Progress of some of our Railways towards Bankruptcy," showing the appalling system of management. Eschewing further prolix development, I am prepared to prove that my scheme will effect a saving of the entire cost of transport of the embryo Lancashire plateway, so that if they carried goods free of charge, the supplementary charges, time, &c., incidental to transfer from dock to plateway, and plateway to mills, &c., would give a substantial net dividend on invested capital, in my undertaking. Coal will be taken from the pits mouth and delivered alongside steamers, as well as sailing vessels for export, at a great reduction on existing rates, not only Lancashire but excellent hard Yorkshire steam coal, 24½ miles nearer Liverpool than Grimsby, and equally so for local consumption, thus conferring on Liverpool an incalculable benefit. Apart from the transport of cotton, wood, and all imports will be able to penetrate further into the interior to the displacement of east coast traffic. The traction engine I propose will be fitted with means for adjusting and maintaining the water in boiler at a level, or nearly so, whether ascending acclivities or descending declivities. The water has been maintained at a level when working on an incline of 1 ft. in 7. There is no novelty in the mode of transit in which the greatest simplicity reigns supreme. The ordinary driving and steering wheels, as well as the wheels of the wagons or trucks, will be substituted by my endless railway wheels, ensuring a minimum friction or resistance, so as to engender equal traction, outcome with railways, the perfect bite of the engine and trucks, which has been fully proved, annihilating all slide or slip. Reference to evidence before a Select Committee of the House of Commons in 1859, on the Boydell traction engine and endless railway, will show some slight analogy of principle. The complicated Boydell system, however, on account of its great liability to frequent repairs, from which my system is exempt, having been found open to improvement, and having operated against its adoption. By reason of a flat surface tyre occupying a large area perfect immunity from injuring the road is ensured, which is far from the case with diagonal bars on existing wheels of traction engines. The cost of engines, trucks, and working expenses are in strict conformity with the practical experience of the oldest firm manufacturing traction engines in the Kingdom, the exclusive contractors and workers of an endless railway engine, which, on one occasion, made a journey from their works at a considerable distance from London through the metropolis, City, across London Bridge to Woolwich Dockyard. I hold their certificate as a practical credential in favour of what I now set forth.

I hold myself at the absolute disposal of the Liverpool, Manchester, and Lancashire important interests, with credentials of the highest class, and with data verifying what I have advanced, and I shall be glad to communicate personally with the municipal authorities and other *committees* or any syndicate that may be prepared to co-operate with me.—Little Tower Street, Nov. 1. W. J. THOMPSON.

## GOLD IN IRELAND.

SIR,—In last week's Journal your correspondent, "F.G.S.," has unearthed what appears to be a rather important fact—the discovery of an extraordinary quartz lode in Ireland. In establishing the fact he quotes from one of those admirable and very useful Memoirs of the Irish Geological Survey as follows:—"At its central portion this fault once formed a wide open vertical fissure, extending for a distance of three-quarters of a mile, with a width of 100 ft. at its widest part. This is now filled with pure quartz; and as, at its apparent termination to the east, it contains thin veins of specular iron ore, we may, therefore, regard it as a true lode." He says further that "some small samples were indiscriminately broken from the mass, and upon assay produced gold." All this does not surprise me at all, although "F.G.S." leaves one to guess at the locality of the said quartz lode. Assuming it to be in accordance with his description, he will find no difficulty in the matter. If the anonymous writer or anybody else interested in the fact will send (carriage paid) 1 cwt. or less of the lode stuff addressed to me, care of Messrs. Bateman and Co., at the Emery Works, East Greenwich, I will, free of any other cost to him, put it to the test of my method of amalgamation, and forward him the result of the trial. I shall not even care to know whence the mineral came, or who sent it. Still, if he likes to be present at the trial he will be welcome.

As to there being gold in Ireland, that is a fact almost as familiarly known as Dublin Bay is, or the Hill of Howth. I have some of it that I got myself in County Wicklow, not far from that beautiful locality the "Sweet Vale of Avoca." Although penning this rather early in the morning, I feel more than half inclined to startle the silence by singing out to the sweet air of "Old Head of Denis," Tommy Moore's delicious lines:—

There is not in the wide world a valley more sweet,  
As that vale in whose bosom the bright waters meet,  
Oh! the last rays of feeling and life must depart,  
Ere the bloom of that valley shall fade from my heart.  
True it is that since Tommy wrote those sweet lines, "The Meeting of the Waters" has undergone a good deal of commercial discoloration by iron oxide (without a trace of sentiment in it; and the huge ugly heaps of geological disarrangements have not, perhaps, added to the charms of the place; but for all that there remains to the pleasure-seeking eye far more than the average range of loveliness, and the big heaps of rubbish even have secreted in them, perchance, a good deal of that root-of-all-evil, which ennobles itself by gladdening sense and appreciation in a thousand ways, and by gilding an amazing surface of fitting material. I have, for my own satisfaction, selected personally from these vast waste heaps considerable samples of the material, and put them separately to amalgamation test for their contained gold. I, therefore, practically know them to be auriferous, and that the gold can be extracted therefrom, and, as I think, to a moderate profit.

Generally, as to the fact of gold being found in Ireland I need only refer to Kane's Industrial Resources of Ireland, Moore's History of Ireland, Fraser's Wicklow, *Mining Journal*, vol. 19, p. 15, &c., and to allude to the gold torques, bracelets, brooches, rings, bullae, boxes, discs, and other ornaments of Irish antiquity, &c. Moore wrote that during the reign of Tighernmas gold was wrought for the first time in Ireland, a mine of that metal having been discovered in the woods to the east of the River Liffey. This is all I have read of his Irish majesty; but I know of no reason why it may not have been facts.

I hold an obstinate belief that it is quite possible to reinstate the dropped mining industry of County Wicklow. It is of small importance to me peculiarly whether others believe it or not. Some mine-owners of Wicklow, however, have ordered some of my amalgamating plant for trials for gold in one part of Wicklow, and I have no doubt of their moderate success. As spirited pioneers I wish them God speed, and I promise all the hearty help that I can give them.

When speaking of an Englishman (an unknown quantity) an Irishman (a known quantity) often represents him as a sort of thing rather low down in the scale of sympathetic humanity. He thinks Englishmen all wrong, and Irishmen all right, and rhetorically bespatter "Englishmen" accordingly. Often very bad manners to say the least of it. He seems forgetful all the while that in England is to be seen nothing whatever of a nationality. I challenge him, however, to find in the crowded streets of London, or in the general society of England, the remotest trace of a national character as "English." Accident of birth is not necessarily nationality of belonging. As the so-called climate of geographical England is said to be no climate at all, only samples of climate, so may Londoners be styled samples of mankind. If the traceable nationalities could be sorted it does not follow that the balance would be English, though it might be English-speaking. If, therefore, there be no basis whatever for the idea of English nationality, it seems worse than idle for the Irish nationality as such to express dislike and even hatred of the so-called English. It is high time to drop such idle talk, and take to something better. The one does not, the other might, and I believe would, pay. During a long life I have seen and studied closely a tolerable lot of the human family that is English-speaking, and I have never had an acquaintance, nor have I one now, who does not in his heart of hearts desire that prosperity should wait on the Emerald Isle as fully and freely as upon the conjoined triple portion of the United Kingdom. I would expatriate myself if I did not feel this to be the general feeling

throughout the British Isles. Happily the Sister Isle is graduating out of its recent interregnum of unrest. In His own good time God will promote some of the disquietness to "another place," and then there may be peace passing their present understandings.

In the meantime those who incline to distrust the labouring portion of the people may dismiss from their minds the veriest shadow of a shade of a notion that they will not give a fair day's work for a fair day's wage. Some Irish labourers have been labelled "idle," and in instances rightly so; but parallel with this should be written that those of the past who helped to affix the labels in a great measure made them so by selfishly withholding a joint reward of their labour. Anybody would rust into idleness and indifference during a long continuance of unjust treatment. I know this to be the case, for some time ago I employed several hundreds of the so-called idlers, and that in a proclaimed district too, in a joint effort with others to revive an old industry of Ireland. Although this adventure, after the expenditure of thousands of pounds, did not succeed, the want of success had nothing whatever to do with the toilers in it. The workers, with rare exceptions, worked heartily, and gave very fair work for the fair money they were paid for it. Only treat Irish workpeople justly, as they ought to be treated, and as far as my experience goes they will become as faithful as people can be. Some lads, without fee or reward or even recognition of the fact till afterwards, took turns at night to guard my lonely house against, in their minds, a probable attack of a couple of malcontents. In some respects they were eccentric boys (a few of them), no doubt, and could not drink petroleum in excess without suffering slightly from inflammation. This, however, worked off out of "office hours," and work time, as a rule, went on as smoothly as if nothing odd had happened in the interim. If an Englishman (?), I do not mind openly declaring that in my household as well as out of doors, I would rather have genuine Irish servants than any others, for whatever faults they may have, desertion of their friends and forgetfulness of kindnesses are not amongst them. All that seems to me to be essential is to treat them gently and to trust them.—London, Oct. 31. T. A. READWIN, F.G.S.

## GOLD IN WALES—No. XII.

SIR,—Allow me to refer to two letters under this heading in last week's Journal, underwritten respectively "T. J. E." and "Z." Having been a kind of custodian of Welsh gold statistics for so many years I have a habit of taking notes of everything of the kind, and sending it on to you for publication. People often "box the compass" of exaggeration, sometimes perhaps without knowing it, and at other times rather or very naughtily. There really need not be and should not be exaggeration as to matters of fact. Matters of opinion are totally different. "Needs must," &c. The world may be expected to stop with a jerk when differences of opinion cease. It is better that opinions should differ so that the exact truth may be elicited. I am not accusing your correspondents of exaggeration in any respect. They appear to have mixed their facts a little, that is all. In the first letter it is said that "at the time Dean was in Wales (I suppose the late Mr. Arthur Dean is meant) the districts were in their infancy." Is it not a little likely that these silurian rocks of Merioneth had an infancy long anterior to that? It is further said that "all the reefs contain 8 to 12 dwts. per ton" (of gold). I do not see how this can be a known fact. With my heterodox notions of fair sampling I cannot divine how anybody can have found that out so as to speak of it positively. I have had a long and disgustingly interesting and disappointing experience in Merioneth, and I cannot consistently let that erroneous notion pass undisputed. I must invite further proof. Not very long ago I published in your Journal an analysis of some hundreds of trials of the mineral lodes of Merioneth, chiefly of the Mawddach Valley and near it. From all these and a good many more trials made since I am obliged to come to the conclusion that very few of the lodes are worth bothering about for gold or anything else. On the other hand, there is not a shadow of doubt that a few of the lodes are wonderfully rich in gold. In short I have plenty of positive proof of that fact. It seems inappropriate to suppose that 8 and 10 ozs. of gold to the ton is a natural consequence to the raising of the lode stuff only 5s. the ton.

The four months gold yield from one of the mines in North Wales may be correct as quoted for aught I know (I have not my notes at hand), but the writer might have added that about 40 tons of Clogau quartz gave nearly 40,000z. into the shareholders' hands. How much of the true yield went elsewhere is not yet history. The like has never been seen there since. It would be hazardous to prophesy that it never will. It would not surprise me in the least if it did some day: 22 years ago, in a paper on Welsh gold, read before the British Association, I stated my belief that the auriferous minerals of Wales would not yield more than half an ounce to the ton on the average. I am still of this opinion. To get that half ounce profitably is one puzzle, and, from the appliances used, into the proper owners' pockets another. It is difficult to get auriferous quartz in large quantity in Merioneth, and having got it at great or little cost to find truly patriotic helpers in the local natives. This, together with the abominable restrictions of the Crown as to working lands under which it holds mineral rights, and the general disinclination of owners of private lands to let their minerals be worked at all, combine to make equitable arrangements almost impracticable. "True it is; pity 'tis, 'tis true."

Your correspondent "Z." informs your readers of a wonderful discovery of gold which was found near the railway between Bala and Festiniog. Some of your readers I dare say would be very glad to know the whereabouts of the discovery and the nature of it. I should very much like to see a specimen of it. I do not doubt it in the least, as not far off that line of railway, about two miles north of Llanwchlyn, Mr. John Bright, M.P., myself, and others were allowed to get nearly 2000 ozs. of electrum gold from about 4000 tons of quartz, and this place afforded very rich hand specimens of great and varied beauty and interest. I may mention that within the last 12 months I have made within the time perhaps the largest experiment in copper ore dressing that has ever been made in Merioneth. About 5000 tons of the rock mass at the Glasdir Mine have been taken through and through, and in the rough put through an ordinary "Blake" and through Green's jiggers, all of the olden time, obtaining as a result about 1-10th of that quantity of copper ore charged highly with arsenical copper pyrites. About 50 lots have been sold to Vivian and Sons at Swansea, fetching about 1882z. The lots varied in price from 17. 12s. 3d. to 77. 5s. the ton. About 2000 tons of the total quantity were sampled in different ways, and some 50 tons of it amalgamated by my process, giving a result of a trifle under 4 dwts. of electrum to the ton. A large number of assays of the varied lode stuff has been made, and the whole of it ascertained to contain more or less both of gold and silver.

The experiments both for copper and gold are satisfactory enough as far as they go. The mining experience has proved that three or four times the quantity can be raised at one-fourth the heretofore cost, or perhaps less than that, by using rock drills. The machinery experience proves that an outlay of about 1500z. or 2000z. would place the property in a position to reduce and dress the increased quantity. The amalgamation experiments also prove that from 2 to 4 dwts. of electrum can be obtained by the Britten-Readwin pans, at the cost of the operation of less than 1 dwt. per ton, and that at the mine the chief portion of the amalgamable gold is obtainable from the matrix adjacent to the metallic sulphides. It is now proposed to suspend the raising of ore, and to take steps for increasing the crushing and dressing power, and in the meantime to prosecute to the fullest extent the amalgamation trials, based on the recent experience. These would have been carried out long ago, only after a Sunday robbery of quicksilver at the works, in the hope of obtaining by theft what could not be got by bribery of "fifties," and the sudden death and burial of my son-in-law, near the mine, I had nobody I could trust with the important operations. It is otherwise now, a long series of domestic afflictions have passed away, and I am at liberty to finish the work myself. T. A. R. London, Nov. 1.

## PULVERISING CORNISH ORES.

SIR,—I have read with some interest your extracts from the paper given at the Mining Institute of Cornwall, on Cornish Stamping Machinery, by Mr. Husband; but although a good discussion ensued

it seems to me that a very important machine, Marsden's Pulveriser, is not much known amongst Cornish mine owners, yet there can be no doubt that in good times this machine will to a very great extent supersede the stamps. I know from personal experience that these pulverisers are very valuable adjuncts to crushing machinery, and that for many purposes the use of a stone breaker or ore crusher for preliminary breaking is not needed. I have witnessed some experiments made with one of these machines, when pieces of tin ore 8 in. or 10 in. long by 16 in. wide and 5 in. thick were reduced at one operation to pass through a 30 by 30 sieve, equalling 900 holes to the square inch, and this process, even to the sieving, was entirely automatic, and I am assured that the machine can be so arranged as to reduce even to the fineness of flour if required. I was favourably impressed by what I saw of it, and I consider the name of the patentee a sufficient guarantee of its successful application.

Leeds, Oct. 30.

W. W. W.

## SILVER AT CALLINGTON.

SIR,—During the last two months I have endeavoured, through the medium of *Mining Journal*, to stir up some of the many talented silver miners in the district. As most practical miners, however, prefer the pick to the pen I suppose I must not be unreasonable in my request, although it would be unjust not to thank "B.," and also your last correspondent, for several very interesting remarks, particularly concerning the Silver Hill Mine, which we are all watching with much anxiety. Now, with reference to the Brothers lode in this sett, there was once as rich a course of silver as any geologist would wish to see—in fact, while it lasted, it might have been called a little Potosi. As to this wonderful lode, perhaps it is not generally known by the shareholders in the adjoining mines that it runs through both the Prince of Wales Mine and the Fortune Mine. Here, in the very centre of both of these mines, several fields being intermined in a very strange manner—I repeat in the very centre of both, a large area of rich silver ore, particularly to the east of Bennett's shaft, has been profitably worked, more or less, for about the last 40 years; in fact, it is now at this very moment so very rich that a common miner (who went down and saw it with his own eyes a few weeks ago, and took out some silver, and had it smelted too,) reported that he was perfectly astonished at the extent of ore ground, and could not have believed it if he had not been an eye witness. Further, it must be borne in mind, that this extensive piece of ground which is called the 10 fm. level, is in reality drained to the 40, so that it is likely to prove of enormous value, but how deep down it will hold no one can predict, perhaps all the way to the intersection of the great mundle lode, the distance of which is too difficult a problem for your humble servant to solve. As to the Langford Mine, which is now progressing rapidly, with plenty of funds in the bank, I will merely, in conclusion, remark that there was a capital shoot of horn silver found very near it more than 30 years ago, which lasted from the adit almost to the very surface, but which the old miners accidentally left behind. That this is no myth there is a well-known captain, and a thoroughly practical one too, who has long lived in the very heart of the district, who can confirm my statement, and mention besides many other matters of much more moment.—Exeter, Nov. 1. AN OLD AMATEUR.

## SILVER HILL MINE.

SIR,—Allow me to alter a sentence in my letter, kindly inserted in the Journal last week, for "do not intend" read "do not manage that it should," &c. I was very glad to see the important and welcome letter of Capt. Rickard. Of his good management and energetic pushing on through Silver Hill there is no question, all that is satisfactory. He gives us a cheering picture of the wealth of Wheel Brothers lode, and presents the probability of meeting therein a rich bunch of silver ore sufficient to pay for reduction works, &c. I presume it is not his fault that steps are not taken for the conversion of the lode stuff at an early date. Is this to be delayed till some 250 more fathoms of tunnel is finished? I would ask whether it is not time for the directors to take counsel with the shareholders on a half-yearly meeting as to working the richest lode already cut while the tunnel is going on, with the hope of realising the position held out by Major Fortescue of the mine being at least to some extent self-supporting. If the financial state of the company will not stand this (the erection of a reduction works), then of what use can it be to extend a tunnel another 250 fathoms, cutting more rich lodes, and piling stuff without the means of converting it, and extracting the ore contained therein? Such a step would command public confidence and support, without which a business enterprise cannot flourish long. A. S. Uak, Nov. 1.

## WALKHAM UNITED MINES.

SIR,—Can any of your readers inform me if anything is being done at these mines, as I have not been able to gather any news concerning them for some time? The name of the company having disappeared from the door where it used to be in Walbrook, I am at a loss to know where its offices now are. The last I heard was that a committee had been formed to inspect the mines some months ago; but whether they did so or not, or what the result was, has not been communicated to the shareholders. For a time after the company was brought out (during the mania in the early part of 1881) it flourished so far as paper reports go—then it suddenly stopped. The only explanation I ever could elicit was that there was a deficit on 1000 shares applied for by a clergyman who had failed to meet his calls. Why the directors allowed so many shares to any one man in such a small concern, and of all men to a speculative clergyman, without some reasonable knowledge that the calls would be met, I do not know. No balance-sheet has been issued since the concern was floated that I have ever seen, so I presume the other shareholders are, like myself, left in the dark as to how many shares were applied for, what the actual working capital was, and how the money had been applied. The shareholders should not be ignored altogether, as, after they subscribe capital they naturally wish to know what has been done with it, and that it has been put to the best account in the purposes it was called for. As it is, the summer months have passed, and nothing has been done in the mine which, according to the prospectus, was taken over as a going concern. Perhaps some of my co-shareholders have been more fortunate in their sources of information, and I shall be glad to hear their views, or those of the directors, through the medium of your valuable Journal. A SHAREHOLDER.

## INDISCRIMINATE INVESTMENT IN MINES.

SIR,—Since the palmy days of the Virtuous Lady and Mr. Barnard I am of opinion that I have not troubled the readers of the *Mining Journal* with any letters; but I think that there are three mines that might be noticed with some degree of interest to the present fortunate (or unfortunate) shareholders thereof—Silver Valley, Old Owlcombe, and Callington Consols. In reference to Silver Valley the prospectus guaranteed a minimum dividend at the rate 7½ per cent. for the first six months, and 15 per cent. for the second part of the year. The fifth statement in the prospectus states that the ore has yielded from 150 to 220 ozs. of silver to the ton. No wonder, Sir, of this being a valley with this weight of silver above it; but is it not rather a valley of dry bones? The directorate on prospectus consisted of a "Baronet" and two "Honourables," not to speak of the "Squire." These gentlemen, in the prospectus, "confidently recommended this company to investors, because it was not a speculation," "because the mine is in so developed a condition," and "as the directors and the manager have had large experience in similar undertakings," not to speak of the "60 per cent. per annum," according to Captain Barnes' statement.

In a circular issued and signed Wm. Harrison, and dated July 1, 1881, the following statement appears—"It is with pleasure that the directors have to inform the shareholders that the sale of a portion of this company's estate has been duly carried out, and the payment to the shareholders of 10s. per share will be made on Nov. 30 next." In a letter to the writer, Wm. Harrison states—"Energetic working has commenced on the mine, and we are confident of splendid results." In the "Plan of Strata," St. Endor District, by Geo. Henwood, dated April 20, 1881, the "Rough Longitudinal Section of

Silver Valley Lode" is drawn, and printed underneath is the following—"Silver-lead ore unwrought five-eighths of a mile in length, and roughly estimated to contain 2,000,000 lb. worth of ore." Say two millions. Why not a few hundreds more than two millions? With all this untold wealth as above, yet, Sir, in two short months afterwards there is an appointment made of an official liquidator, and the committee of investigation in their preliminary report state—"Your committee learn that a lease of the property was offered at a rental of 50% per annum, while Mr. Stephenson, the representative of the promoter, admits that it is certainly not worth the purchase-money." What is all this about? I simply wish to know if Mr. Wm. Harrison (alias Mr. Ledru Rollin Reynolds) has completed his two years of free industry to the country, and when the official liquidator is about to make refundment to the shareholders of the Silver Valley Company? The Old Owlcombe and Callington Consols will receive due consideration in successive impressions by your courtesy.

Manchester, Oct. 30.

J. M. R.

#### MINING AS IT IS, AND AS IT SHOULD BE IN NEVADA.

SIR,—I take upon myself in this communication the discussion of practical questions relating to mining, and shall confine myself chiefly to the district in which I am now resident and its surroundings. It will be necessary in the first place, in order to convey correct ideas of what I wish to advance, to preface my remarks with an outline of the mineralogical character of the district and its metalliferous accompaniments. That both the mineralogical and metalliferous character of districts are affected by their geological formation and constitution will be readily admitted and understood. Mining in the general acceptance of the term respects metalliferous minerals and other subterranean products. It, therefore, is a pursuit with reference to objects more or less clearly outlined and definite, and as these induce the operations which are generally of a more or less expensive kind too much care cannot be taken in ascertaining their character and quality. The conditions above named are essential to successful mining, but when existing do not always ensure its success, as incompetent management and direction in the mode and manner of the operations are frequently found more than a counterpoise to such valuable and, when understood, highly appreciable combinations. This district contains all the elements of success. Geologically it is the miners' *beau idéal*, headed by a basaltic ridge which constitutes the axis of the mountain chain on whose flank it is situated in a beautiful zone of porphyritic granite easy for working and of fecund character. In this granitic zone the principal mines are situated in groups, having figuratively family relations. The misfortune has been that in times past no attention was paid to this relationship, or any regard to the requirements of mining as an industrial and remunerative commercial pursuit. The consequence was that this natural grouping of the lodes was ruthlessly disregarded, and its provisions violated, to the injury of individual interests, and of mining in general. It is only in particular instances that a single lode constitutes a prolific and lucrative mine, and hence the confraternity of veins parallel, oblique, and transverse is held as a condition is essentially paramount to the success of individual enterprises. There is no peculiarity in respect of the mines of this district, except it be their distinctively indicative character of abounding wealth in depth. If conduct is the prelude of character, or *vice versa*, character the prelude of conduct, or, in other words, if analogy is applicable to mining in its experimental relation and indicative conclusions, then the natural forecast of the wealth of this district is unsurpassed and indisputable. Take an instance which is one in its truest signification, the bed or containing rock is, as I have already stated, porphyritic granite of an easy, fragile, and somewhat pulverulent nature. The gangue associations of the lodes, or rather of the silver ores, is quartz which as is well known is superior in hardness to the other ingredients of even primitive granite in its composite capacity, and, therefore, is more prone to the action of elements which are not chemically elementary, such as rain, frost, atmospheric air, &c., to which the surface of all countries is exposed. An old and trite saying is "That the weaker goes to the wall," which means in this connection that the least compact of natural substances yield more readily to such external influences. Such must inevitably be the case between an almost simple mineral and an approximately agglomerated or abbreviated one. The phenomena of such conditions in this district is that the country rock disintegrates, and is worn and washed down into the adjacent valleys, whilst the harder and more compact material of which the lodes are composed resisting the action of such influences—whether chemical or mechanical are found protruding above the surface in some instances for considerable distances, and displaying their character, and unmistakably indicating their wealth. The family relationship of veins is no where more pronounced than in this district, nor their confraternity more favourable.

Reciprocity appears to be, if not an order of Nature, an integral principle of her operations—in other words her *modus operandi* is one of exchange, not exacting, never exhausting, give and take, or take and give, the unmistakable expression of all her acts. Her economy of mineral kingdom is wide-spread, elaborate, and perfect. The cycle of her events in this realm is unmeasured by ascertained time, but its revolutions are as certain as are the orbits of heaven. But enough of this—it deviates from my subject which was, and is, the mines of this district to which I will return; but the profundities of Nature although infinitely beyond my comprehension ever attract me, and I follow them.

If philosophy is a factor in any event to the prosecution of useful purposes and the attainment of beneficial results it is certainly so in mining. "To be and not to be" are extremes, Antipodes which cannot be reached; the limit of the former is appreciable, but of both unattainable. Metalliferous lodes had a beginning; from whence did they originate? I will not go into the question now further than to say, from an order in Nature peculiar to themselves, they were not formed in a day, unless the day means an epoch in Nature's march and measurement of time. We have to do with the sensible and realistic, with what is tangible, and within the compass of reason, and the origin and formation of metalliferous minerals are included in this arcana. If we have a correct idea of from whence they came we have also a comparatively correct idea of what they amount to in quantity and quality. As is the nature of the soil to the seed sown in it so is the nature of the rock formation of a district to the lodes or veins which traverse it. In this district, as I have already stated, its geological formation is faultless; its lodes situate in the most fertile of rocks, and dipping towards the axis of the adjacent mountains. The cleavage of the rocks being opposite to the dip of the lodes, the size, composition, and general character of which are such as is always most highly approved where existing, and where absent most ardently desired. They exist here in most admirable conformity; the grouping when pointed out to even an inexperienced observer is to him most clearly intelligible and satisfactory, but to one whose experience comprises a knowledge of the effects and results of such characteristics and such conditions the aspect is wholly inspiring, confidence elating. It is only necessary to ensure from such sources abundant and continuous success to obtain concessions in conformity with the several groupings, and then apply the proper methods for their development.

The ores are principally sulphides of silver, and the lodes commence to display their remunerative wealth at about 200 ft. below the surface, from whence onward in depth their career of prosperity is most marked and assured. The oblique cauter lodes drop in and conjoin in succession, and at every such event magnificently enrich the main trunk lodes. They are mines for miners who understand their professional business, and for capitalists who are desirous or content to develop the wealth which shall handsomely repay them for their outlay, and gratifyingly reward them for the judgment they displayed. I know of such properties, some of which can be had for a moderate proportion of the fully paid up capital stock of the company. The parties owning them not having the means to properly work them, but having the fullest confidence in the wealth they will yield on development under competent direction and supervision, are not only content, but desirous to transfer them to qualified companies free of expense, for a share of the profits, which they feel assured would amply satisfy them. Such, it appears to me, is the proper course to adopt under such circumstances. The vendors

of valuable concessions, when unable to develop the indicated wealth they have discovered, should be content to share the risks and the profits with those who provide the means of doing so. It is a species of co-operation which should be more generally observed and practised in mining. Capitalists would then have the satisfaction of knowing that the funds they provided would, under judicious control, be applied to useful and beneficial purposes: 50,000 lb. expended in the way I have stated, and on properties I can state, would, I have no doubt, in ten years net fifty times that amount, and, in all probability, be fifty times as valuable then than now. Their respective careers of prosperity would early commence. ROBERT KNAPP.

Elsworth, Nevada, Oct. 17.

#### WHEEL FORTUNE MINING COMPANY.

SIR,—In last week's *Mining Journal* I notice a most extraordinary advertisement inviting tenders to buy Wheel Fortune Mine. Can the directors of a company part with the property of the company without winding-up? I can understand the liquidator of a company being wound-up advertising in this fashion, but for directors to offer to part with all the property of the shareholders seems strange. I have not received the slightest intimation from the secretary in Birmingham that the directors were going to invite tenders for the purchase of the mine, and I shall certainly advocate the winding-up of the present company in consequence. W. F. M.

Callington, Oct. 29.

#### PENTIRE GLAZE SILVER-LEAD MINE.

SIR,—I believe the readers of the *Mining Journal* are aware that this mine is opening up very rich, and with a very small outlay of capital. They raised from it last week some of the richest silver-lead ore I ever saw. There is another sett near which ought to be worked. The lodes from Pentire Glaze run into it, and also other powerful lodes have been discovered. The north of Cornwall nearly all the way from Newquay to Boscastle is full of silver-lead, and which has been proved (as at Old Treburget) to be very rich for silver, but unfortunately scarcely a sett has been properly developed. I believe Pentire Glaze, with the able and experienced captain (Capt. Rich. of Bodmin) will be one of the best mines in the county. Near here there are valuable black limestone quarries, and an almost endless quantity of beautiful yellow sand, which is so valuable for sanitary purposes and for manure. There are greater undeveloped resources around here than in almost any part of England, and I hope in future it will receive the attention it deserves.

Rock, Oct. 30.

T. M. PASCOE.

#### SHROPSHIRE LEAD MINING DISTRICT.

SIR,—As we have previously intimated we do not think the shareholders of the Tankerville Great Consols are doing anything too much, or doing it too soon, in their heartiness and promptitude in raising the additional 27,500 lb. The large and splendid sett they have under hand richly deserves what they are doing, and if they are not well rewarded we shall be very much disappointed, and we have been acquainted with the district and with these mines for a good many years. The Chairman spoke with great ability and confidence at the meeting, and is ready to appear to back his opinion with his own purse, and the manager's diagram of the lode speaks volumes. We hear that the Perkin's Beach sett is to be favoured with a large capital, which we are all glad to hear, for it is well worthy a spirited development, their lodes having been proved to be very large and lead producing, and run all through the sett, or nearly so, in the very finest mineral ground.

At Mytton Dingle business has been rather quiet for some time, but we hope the London party who have it in hand will commence operations at Christmas with the new year. It will not require a large capital, so is but a small undertaking for them, and lead ore is found in paying quantities 15 yards from surface, and there is a fine lode with ore in it for 50 fathoms in length. This is a sett of 140 acres, all mineral ground.

MINER.

#### WEST OF CORNWALL—ST. AGNES.

SIR,—No doubt the interesting particulars of "Tourist" in the *Journal* of Saturday last on tin mines, near St. Agnes's Beacon, has been acceptable to many shareholders, as encouraging them to hope for dividends from these mines. As a Wheel Coates shareholder I am thankful to "Tourist," and shall be further obliged if his gleanings will enable him specially to add why each mine of the group except Wheel Coates should be at a considerable premium—that one alone, with more efficient plant, and, as I am informed, capable of returns of tin exceeding either of the others, with the exception of West Kitty. I may add without fear of contradiction that the share-interest is held by owners possessed of capital fully equal to that of the owners of either of the other mines, and no portion of it by merchants who can possess any privilege from supplies to the mine.

London, Nov. 2.

A SHAREHOLDER.

#### PERRAN SILVER-LEAD CONSOLS.

SIR,—A short time ago I called attention to a discovery recently made in the bottom of Phoenix engine-shaft. So far, it is permanent, and has every appearance of being so. Last week another very important discovery was made in the 60 end south, which is a positive proof that the ore ground extends in length, as this end is about 30 fms. from the shaft. About the same distance ahead of this end, 60 fms. from the shaft, a canter lode comes in contact with the Phoenix, and is almost sure to have a beneficial effect. The present prospects of the mine are bright and encouraging; and although the shareholders have had many serious losses and drawbacks to contend with since they commenced working or emptying the mines of water, they possess in Phoenix the elements to recoup their spirited outlay. It is the intention of the shareholders, of which Mr. Henry Maudslay is the principal, to work the mine by the most improved appliances in dressing and all other branches. With good machinery and such prospects, Phoenix cannot fail to soon enter the list of dividend mines.—*Trevail, Oct. 31.*

W. N.

#### PROFESSORS, AND MINE REPORTS.

SIR,—It appears that the Simons' Reef Gold Company is to follow the Carta Para into liquidation in consequence of the intermittent character of the celebrated reef to which Professor Vazie Simons stood god-father. The fortunate debenture holders would, no doubt, be glad to know amongst other things—who the original vendor of the company's property was, and how much he was paid for it? Who the intermediate vendor was, and how much he received? Who promoted the company? How many shares did each director subscribe for and *bona fide* pay up on? How much they have received back in the shape of fees? Who employed Professor Simons to survey and report on the property? How much he received for his report? Whether anyone accompanied him in the survey, and who, and whether both saw the reef which has since so mysteriously disappeared?

I should further like to know how it was ascertained that the reef then ran right through the property (about 1800 acres) as shown on plan accompanying prospectus? Who prepared that plan, and on whose instructions? Whether Professor Simons himself saw it before it was issued, and whether he approved it? Whether the Professor himself took the samples (which were assayed) from the reef, and if yes, whereabouts was the reef at that time. If no, how did he assure himself that these samples ever came from the reef at all, or indeed from off the property; and if he can in any way account for the fact that the reef then so conspicuous a feature of the property, and in short the very essence of its value cannot now be found?—*St. Leonards, Oct. 30.*

B. P.

[For remainder of Original Correspondence see *Journal*.]

CASSELL'S PUBLICATIONS.—Science for All, part 60, completing the work, contains articles on scientific deception, of which many could give abundant evidence, by Mr. W. Ackroyd, F.I.C.; on bird's nests, by Mr. R. B. Sharpe, F.L.S.; and on water-fleas, by Mr. Arthur Hammond, F.L.S. The part is accompanied by a classified index to subjects treated in the five volumes from which the reader

may ascertain what he has learned, or had an opportunity of learning from the work, and also who has furnished the instruction. The address as conclusion by the editor is excellent. Canon Farrar's Life and Work of St. Paul extends to the chapter giving the account of St. Peter and St. Paul at Antioch. The Quiver for November commences a new volume, is of the usual character, and well adapted to suit the tastes of those for whom it is written. Knight's Practical Dictionary of Mechanics extends from soldering-iron to spinning.

#### REPORT FROM CORNWALL.

Nov. 2.—Seeing that October so sadly disappointed the reasonable expectations that were entertained with regard to a rise in the price of tin, it is unreasonable to expect that of all months of the year November should make amends. For whatever improvement may come we shall, of course, be thankful, but those who expect least will by present appearances be the least disappointed. December, too, is a broken month, in which men of business as a rule are more occupied with bringing old speculations to a close than in opening up new ones, and in which there is as much hand to mouth living as in any period of the twelve months. Capt. Teague's opinion, therefore, that the improvement which he anticipates will come with the new year seems amply justified by all the conditions of the situation. His practical speech at Carn Brea account is certainly one of his most hopeful utterances, and has met with the widest acceptance. He has been right in his forecast as to the reduction of tin stocks, and we know of no better authority from which to accept the conclusion that demand has more than overtaken supply, to which of course there can be but one issue. Whether he has sufficiently allowed for the efforts which are being made in so many quarters to increase production is a point of comparatively little consequence. Their efforts can only have under present conditions certain limited results, and at most can but slightly delay the end desired—the placing of the tin trade upon a more assured and staple foundation that has been known within the memory of man. That we have been steadily approaching towards such a consummation anyone who carefully notes the character of the later fluctuations, and the steady, if small, gain that has been made, must admit; and though the share market may at present be dull, and prices ruling low, it cannot be very long before the excellent opportunities now presented for investment in several directions will bring about a season of acceptable activity.

The controversy initiated by "Respublica" is likely to be long and sharp. The author of this much-abused and equally much-praised pamphlet upon the smelting interests of the county is evidently prepared to take care of himself, and quite ready to defend the position he has chosen to take up. That being so, the more discussion there is the better. Nothing is gained from one-sided statements in any direction; but out of all controversy there is a chance at least of effectual good, which in the present case seems a certainty. It would be interesting and not less valuable if all parties to the discussion were to indicate a little more plainly their personal relations to "smelting and smelters" *pro* and *con*. The controversy might, possibly, not develop so widely, but certainly its utilities would not be lessened, if the outside public knew how far this or that writer spoke with authority, or how far they might be presumed to be biased in one direction or another by their surroundings. For ourselves, we simply occupy the position taken up some years ago, long before "Respublica's" pamphlet was thought of. Again and again have we pointed out that it would be a very small operative matter for our large tin mines to add smelting to their present extensive and complicated dressing operations, taking whatever profit there may be in the process, and sending their produce direct into the metal market. Nothing that we have ever seen or heard has led us to modify that view. No doubt there are difficulties, but they are nearly all in the initiative, and directly the old grooves were abandoned most would be overcome. The policy of stacking tin has again and again been questioned; but if it is a good one—and there are times when it certainly is—there is less difficulty in stacking white tin than black, and it is certainly an equally good security for advances. And so the matter be argued all round. It is to be hoped that the present discussion will not drop until some definite result has been produced, either in the direct proof that the present system is right or in the commencement of practical reform. The wider—we had almost said the warmer—the debate the better.

Whether the remarkable brevity of the report presented at South Caradon account was intentional or not we cannot say; but the policy of such brevity is unquestionable. No one seems really to know what the future of the mine will be, and the present adventurers do wisely in keeping all their knowledge of the mine to themselves. It cannot be long, however, now before some definite arrangements will have to be made.

#### TRADE IN SOUTH WALES.

Nov. 2.—There is no retrogression in the activity of the South Wales coal trade, which is only governed by the state of the weather, which has been boisterous of late. Notwithstanding this, the shipments have been very heavy, the bulk of the vessels arriving being steamers, which are not so much at the mercy of the elements. Both steam and house coals are in great request, and the tendency of the latter is naturally towards an increased demand. The amount sent away from Cardiff last week was 117,078 tons foreign and 23,330 coastwise; Newport, 25,745 tons foreign and 17,981 coastwise; Swansea, 9442 tons foreign and 9442 coastwise. Patent fuel was shipped at Cardiff to the extent of 2658 tons, while Swansea sent away 3684 tons. The winning of coal is unremitting in South Wales. The Gwerna Colliery Company some time ago bored upon the Gwerna lands to a depth of over 18 ft. in search of coal, and at the time succeeded in striking the Mynyddislwyn seam of house coal. Operations for sinking a trial pit were forthwith commenced, and last week they had carried the sinking of the shaft down so successfully that they reached the top of the coal in one part of the shaft, and by Monday morning the rock was cleared off, and the coal proved a seam of about 3 ft. in thickness, and apparently of excellent quality. From the pitch of the vein there is every indication of an extensive quantity of coal to be worked, as there is a large area of land reaching up to the mountain that remains in an unworked condition. The project of sinking upon the above site was suggested by Mr. T. Freeman, and he encountered many difficulties in the work of sinking, the sections being hard Pennant rock. The above company intend working the coal from a drift lower down, towards the railway. The usually quiet village of Mynyddislwyn was quite *en fete* on Monday, cannonading being kept up by the workmen during the day.

The iron and steel trades of the district are well employed. The amount sent away from Cardiff last week was 4425 tons, while Newport exported to New York 1530 tons; Cape Town, 1500 tons; Rosario, 911 tons; Alexandria, 430 tons; Aarhus, 600 tons. The imports of iron ore at Cardiff from Bilbao amounted to 4240 tons, and 95 tons from other places; Newport, 4836 tons from Bilbao, and 800 tons from other places. The price may be quoted at from 15s. 3d. to 15s. 6d. per ton.

The large steelworks at Panteg, Monmouthshire, which have remained idle for a considerable time past, have just been purchased by Messrs. Wright, Butler, and Co., the proprietors of the Elba Steelworks, Gower-road. These large works at Panteg will be immediately fitted with the latest improvements, and an early start made. At the time the works closed, more than 18 months ago, considerable distress was caused in the district, a number of hands being thrown out of employment.

Tin-plates, after touching 16s. 9d. to 17s. for coke made, are now selling at from 16s. 3d. to 16s. 6d. per box. Tin has receded to 102½ for cash, with a weak market, owing to the arrivals from the Straits, while more is known to be on the way.

There is a scheme for another dock at the mouth of the Ogmore, near Bridgend, upon the estate of the Earl of Dunraven, or rather it is an alternative scheme for the Cardiff freighters, who are resolved to become independent of the Taft Vale Railway and Lord Bute at the same time.

The Whitland and Cardigan Railway is about to be sold to the Great Western Railway Company, who will undertake to construct

the extension from the Crymmych Arms to Cardigan, a county town which at present possesses no railway communication.

#### REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

Nov. 2.—This week circulars have been issued by the leading coal-owners on Cannock Chase, advising customers of an advance of 1s. per ton on coal of all sorts, and on rough slack, and a rise of 6d. per ton on fine slack. Although the 1s. advance applies nominally to manufacturing and steam coal, as well as domestic sorts, vendors, it is pretty well understood, will be satisfied with a 6d. rise on these coals in regular business. Deep house coal is now quoted 11s. to 10s. per ton for the two best qualities, and shallow coal 10s. to 9s. respectively, delivered into trucks. These quotations are not, however, universally procurable, realised prices being from 6d. to 1s. per ton under those figures. Steam coal sells at 6s. to 6s. 6d. per ton. This advance in prices carries with it a rise of some 3d. per day, or set, to the colliers on the Chase. There is no alteration in the quotations for coal mined in the iron-making localities. These remain nominally at 11s. and 10s. respectively for furnace coal, and colliers' wages 3s. 8d. per day in the Thick seams and 2s. 10d. per day in the Thin seams.

On Change yesterday and to-day the demand for pig-iron was not active either for foreign or native sorts. Hematites were quoted 70s. and native all-mines 67s. 6d. to 72s. 6d. nominal. The Fenton was a new pig brand on offer at 55s. for forge sorts. The makers are the North Staffordshire Coal and Iron Company. Finished iron is quiet, but makers are firm. The Osier Bed Iron Company, Wolverhampton, one of the oldest houses in the sheet trade, propose to close their tin-plate department owing to the unprofitable prices which have ruled for some time past. They have given this week a month's notice to terminate their engagements with the men in this branch, to the number of about 80.

The arbitrators under the South Staffordshire Mines Drainage Acts will on the 11th inst., in Wolverhampton, publicly consider applications against their proposals to make draft awards for mines drainage rates in the Old Hill and Kingswinford districts. The rate for Old Hill will be 3d. per ton on fire-clay and limestone, and 6d. per ton on ironstone, coal, and slack. The rate for Kingswinford will be 2d. per ton on all minerals, and is intended to defray expenses incurred on mines drainage before the district voted itself out of this section of the Act. Both rates endure for a year.

The Mill and Forge Wages Board met in Wolverhampton on Monday to hear the operatives' claim for a 10 per cent. advance. The men urged that trade had improved, selling prices have been declared up, and labour was scarce. These reasons not being considered sufficient by the masters, the operatives further urged that the North of England men were already receiving 2½ per cent. more than those in Staffordshire, and yet they were now seeking a further 7½ per cent. rise. The employers firmly refused to advance at all upon the present rate of 8s. for puddling short weight, and it was resolved to ask the new President (the Mayor of Birmingham) to arbitrate. Nothing further can be done until after the 9th inst., as his worship's hands are fully occupied up to that time.

#### TRADE OF THE TYNE AND WEAR.

Nov. 2.—The coal trade generally in these rivers continues good, and all the works are well employed. The steam coal trade on the north side of the Tyne is a little more quiet than it has been during the past few weeks; but the works are still fully employed, and as the price of the Yorkshire steam coal is to be advanced the Northumberland steam coal is expected to be advanced in price also. The Northumberland miners propose to have a general meeting on Christmas Day at Horton, near Blyth. The reason why this place has been selected for the meeting is the fact that a meeting was held at this place 20 years ago, when the men's Union was formed; it is, therefore, considered to be the birth-place of the Union. The objects of the meeting are—first, to celebrate the 20th anniversary of the Union, and they also desire to publicly recognise and do honour to the men who assisted in its establishment, several of whom survive. In the county the proposed gathering has been much discussed, and the men are almost unanimously in favour of it. Several North country gentlemen approve of the objects of the meeting, and some of them will attend and assist at it. Mr. Joseph Cowen, M.P., is expected to attend, and others. Mr. Hugh Taylor has written stating that he will be unable to attend, but he highly approves of the objects of the meeting, and wishes to subscribe 10l. towards the funds. He also remarks that—"For many years past over-production has injured the coal trade. Low prices mean low wages, and so we suffer on both sides, whereas a moderate restriction of the output all over the coal fields of this country would leave your capital and labour profitable employment." Mr. Taylor is a very extensive and popular colliery owner, and his opinions on this important subject are worthy of notice. It is not expected that there will be any difficulty with the miners of Northumberland and Durham respecting wages at this crisis. The sliding scale regulation will, it is expected, be loyally adhered to on both sides, and under the provisions of this scale the miners will shortly secure an advance. The advance of wages received by the miners in the Midland districts may, indeed, cause some disquietude, but it must be recollected that the wages of the Midland miners, when their advances are taken into account, still remain considerably below the average earnings of the miners in this district.

An alarming explosion of gas occurred on Thursday at the Stanley Colliery, in West Durham, by which two men were seriously burnt, but fortunately no lives were lost. The most dangerous period in the year for working coal mines has now arrived; it is to be hoped that we will escape any serious explosion in Durham. The Council and a number of the members of the Northern Institute of Mining and Mechanical Engineers have arranged to visit the Channel Tunnel, and inspect the works on Nov. 18.

We noticed lately that a number of locomotives for underground work were being constructed at the Grange Ironworks, near Durham. Eleven of these novel engines have been completed; they will be worked by means of compressed air, and they are to be employed for underground haulage at the Whitwood Collieries, near Normanton. There are two types of engine; the larger kind will be employed on the main roads to the shafts, and they will haul about 12 tons up a slight incline; the lesser kind of engine will be employed in hauling the coal tubs from the face of the workings to the stations in the main roads. These engines will drag a load of 5 tons up a moderate incline. The arrangements for working on this system at these works are most complete and extensive. Air-compressing engines are erected on the surface, and this compressed air is carried down the shafts and into the workings by means of pipes of great length, and the air vessels connected with the engines can be charged at various convenient stations in the workings.

The iron trade has been very steady this week, and considerable animation is observable, there being much enquiry for forward delivery on the part of consumers. Some makers now ask 45s. for No. 3 for the first three months of next year. The trade is very firm; it is expected that the shipments this month will reach 100,000 tons. Stocks are small, and are being constantly reduced. The manufactured iron trade is also firmer. There is not much change in the price of any kind of finished iron; there are, however, orders on hand for six months to come. At Middlesbrough the coal trade is very active, there is a large prospective demand for manufacturing coal. Coke firm at 10s. to 11s. at the ovens. The whole of the shipbuilding, engineering, and iron manufacturing firms on these rivers are reported to be fully employed, and many of them are doing overtime. Most of the iron shipbuilders have work in hand which will keep them employed for six months to come, and many of them have work in hand for a much longer period. The number of ships turned out in 1881 far exceeded the number built in any previous year, and the number for 1882 will be much in excess of 1881. Several very large and powerful steamers, built to the order of Italian and other foreign firms of shipowners have been launched by Messrs. Palmer and Co. from their Jarrow and Howden yards, on the Tyne, during the past six months, in rapid succession. All the other eminent shipbuilders on the Tyne—Mr. Mitchell, Wigham, Richardson and Co., A. Leslie and Co., &c., have displayed great activity in the construction and

equipment of vessels. Judging from the large amount of tonnage already turned out and the encouraging aspect of affairs at the several shipyards, the year now drawing to a close promises to be one of the most noteworthy and prosperous in the annals of shipbuilding on these rivers. The stocks are all occupied by vessels in various stages of progress, and several steamers are rapidly approaching completion, and will be turned out before the close of the year. It is stated that a new shipyard is to be opened shortly at Wallsend by a company in course of formation, and that the manager of one of the most extensive shipbuilding establishments on the Tyne will take the lead in carrying out the undertaking.

We noticed lately that Mr. Leslie, the eminent Tyne shipbuilder, had revived the old project of a ship canal between the North Sea and the Atlantic. Mr. Leslie believes that the scheme is not only feasible, but it would be profitable, and it would give an enormous stimulus to the commerce of the district. It is evident that if this were accomplished the canal would be the natural route for the commerce of Central and Northern Europe to the Western Hemisphere, as well as for the great trade to the West of England, with its increasing exchange of coal, iron, and manufactures. We, however, omitted to notice that the canal has actually been formed from Bowness to Carlisle, a distance of little more than 11 miles. The Bill for this portion passed through Parliament on Tuesday, April 6, 1819, and the work was proceeded with. It was finished at a cost of 150,000l. in 1823. It was then expected that the canal would soon be extended to the Tyne, but that hope has not been realised. The length of artificial canal required would not be great, only from the Irthing Gillsland, to the Tyne at Haltwhistle, six miles, but the route from Gillsland westward would require several locks. Whether the scheme will be seriously entertained or not remains to be seen; it is certainly a bold one, and if it could be accomplished the results would be very important.

#### REPORT FROM NORTH WALES, SALOP, AND CARDIGAN.

Nov. 3.—As yet nothing definite has been settled between the colliery proprietors and the men; but it is generally hoped that the men will be wise enough to accept the 10 per cent. advance offered by the masters. In the Buckley district this has been already arranged. There was an outburst of water in the lower workings of Plas Kynaston Colliery last Friday, which necessitated the removal of the men to the higher seams.

A fatal accident has occurred through an explosion of dynamite at the Oswestry tunnel of the Liverpool Waterworks, and there has been rather more than the usual number of accidents in the mines, quarries, and collieries of the district during the past week.

Perhaps one of the best places to obtain an idea of the magnitude of the Carnarvonshire slate quarry industry is the summit of Moel Tryfaen, about seven miles from Carnarvon. The mountain takes its name, Tryfaen, from the three stones or piles of rocks that mark its summit. These rocks are protrusions of the felspathic half-granite rock that lies at the base of the slate beds, and here forms the north-west boundary of those beds. The slide beds dip down very sharply in general, but in various folds and undulations locally to the south-east, and, as seen in the numerous quarries round about, there is an ascending order—the red slates, then the purplish blue, then the striped, then purple, followed by a great mass of blue, which is capped by the silk, a soft copper-coloured slate, and the green, which forms the summit of the whole. Interstratified with the slate beds are several hard beds, and dykes of greenish unsplittable rock traverse the whole series in various directions. Around us as we stand south-east of the stones there are Alexandra, Moel Tryfaen, Braich, Old Braich, Fron, and Dyrnferrian Quarries. To the north-east are the "Scotch Company," Carregfawr, and other smaller quarries stretching away to the Great Llanberis Quarries, about seven miles off, and to the Penryn, some four miles to the north-east. To the south-west numerous waste heaps, great excavations, with the steam from many fixed and locomotive engines mark the site of Pen-yr-Oseld, Alwyn, Pen-y-Bryn, Dorothea, South Dorothea, Talsarn, Cloddiafoel, Fronheulog, Tyn-y-werglodd, and the range of smaller quarries with the Llywd Coed by the side of the road leading from Carnarvon to Beddgelert. Unfortunately, few of the quarries are working more than four or five days a week, but many of them are now in a more healthy and prosperous state than they were.

The slate beds dip under a series of dark rocks forming the mountain to the south and east of us, and which in Drws-y-Coed, just over the shoulders of the next hill, contains the copper mines for which that part through the wood—though now, alas! there is no wood—is famous. Then stretching round from end by south to west there is the outcrop of the totally different class of slates of which Festiniog is the type. Quarrying in these slates may be considered as yet in its infancy, but it has a great future before it, when the difference between these slates and the Carnarvonshire slates proper is admitted and understood locally. Even now there are quarries which are advancing, and which show promise for the future, as the Glan-y-rafon, the Snowdon Clogwyn-y-gwyn, Prince of Wales, and Foel Clynog, the latter quarry being the furthest we can see to the south-east. Beyond, in the same direction, the sun is shining on the Llanhaearn Paving Sett Quarries, which lie on the coast as you go down to Pwllheli. Socially, the houses of the quarrymen, as they are scattered over this Moel Tryfaen, are interesting. They are trim, and the profusion of muslin curtains and of flowers about the windows, bespeaks the cleanliness and neatness you see within. For a slate quarryman is not an ordinary workman; he is a contractor, has responsibility resting upon him, exercises his judgment, in all which he is helped by his wife. Then on this mountain side there are at least a dozen large chapels, a church, and a substantial range of Board Schools. Let the English journalists who sneer at "Taffy" take a turn up here in their next holidays. Our view is very extensive, stretching over Anglesea to Holyhead and Amlwch, and in the pleasant bays between the headlands there are little fleets of fishing vessels reaping the harvest of the sea.

Then this hill-top, 1000 ft. or so above the sea, has a sand deposit, which we visit, in which are shells of recent and existing species and of which geologists have often written. It is all the more interesting to us because, only a few weeks back, we were at a similar deposit on a hill-top by the Christiania fiord, in Norway, and both deposits, so far apart, point to a general upheaval of the land out of the sea within a very recent period—geologically speaking.

But "the rain it raineth every day," and by the time we have refreshed ourselves in an ancient Welsh farm-house the sky is overcast and the rain falls, so that we have a wet ride back to Carnarvon. But it will be long before we forget the simple, friendly manners and the hospitable fare we have enjoyed, more than once and in more than one peasant proprietor's house, on the slopes of Moel Tryfaen.

#### REPORT FROM DERBYSHIRE AND YORKSHIRE.

Nov. 2.—The strike which so many expected on the part of the coal miners has not come off as was anticipated in the report written a month or more since. The colliery owners of Derbyshire, or at least a considerable number of them, were the first to make a concession so as to keep the places going, and of course other districts followed. Such is the force of example on the part of those who might have been expected to have had a little more consideration for themselves as well as others. However, it is satisfactory after all to be free from the interminable talk of the agitators which went on ceaselessly on one string without the slightest variation. The trade may now be expected to go on as usual, but it is not likely to be quite so active as it has been during the past four or five weeks. Merchants and large consumers of coal have purchased largely in the belief that there would be a strike, and that prices would jump up something like what they did in 1872 and 1873; but in this they have been disappointed. For the next month, therefore, it is not unlikely that coal will come down in values at the ports as well as in the principal markets, whilst it is scarcely likely to reach 27s. per ton in London, as it has done. The Clay Cross, Grassmore, Eckington, and several other collieries have sent a large tonnage of house coal to the Metropolis lately, but there is no doubt that the

dépôts are now well stocked, so that the wholesale purchasers will rest a little before giving out more orders. Steam coal has been going off tolerably well, but not to anything like the extent that could be desired; but this would be remedied were the proposed line of railway from Chesterfield to Hull carried out. It has already received a large amount of influential support at both ends, and the prospects of its passing the ordeal of a House of Commons Committee when it gets that length are by no means discouraging. Manufacturers have been purchasing rather largely of engine coal of late; but prices have not materially altered, although, as might be expected, they have been in favour of sellers. Gas coal has been sent away rather freely; but this is on account of contracts entered into some months ago, when there was no intimation of a strike. The consequence is that, with the advance of wages, these contracts must be the reverse of advantageous to those who hold them. Ironmakers have been doing a steady business in pig-iron, rates for which have been firm. In manufactured iron, however, there has been no material change for some time past, and the production of the rolling-mills of Derbyshire has been considerably less than in some former years. On the other hand, there has been a full average output of malleable iron castings, as well as Bessemer rails.

Trade in Sheffield has undergone but little change, most branches being active. In composite armour-plates there is continued activity, as there are heavy orders in hand for them, with every prospect of a long and brisk season, as the speciality has not travelled outside of the town in which the manufacture of them has been patented. Plates for boiler-makers and shipbuilders are in steady demand, and the same is the case as regards sheets, hoops, bars, and wire. Of late there has been an increased make of both Bessemer, crucible, and the open-hearth steel, a good deal being for exportation in the crude state. Bessemer rails have been more extensively produced of late, although the prices have not much improved, and our makers are placed at a great disadvantage as compared with those whose works are near to shipping ports. This in a great measure would be obviated in the event of the making of the canal from Manchester to Liverpool, to which just now a good deal of attention is being paid by some of the leading capitalists, merchants, and manufacturers of Lancashire. Such a canal would not only place the Sheffield manufacturers in a position to ship their goods at Manchester, instead of Liverpool or Hull; but it would be the means of causing a large trade in coal, especially steam qualities, from the South Yorkshire field. Most of the cutlery houses are now well supplied with orders; but prices have gone up, owing to the heavy advance that has taken place in the best descriptions of haffings, ivory and pearl. In edge tools and saws a fair business has been the rule, and this also applies to shears, files, and steel wheels and axles. At the foundries work has also improved as regards heavy castings for machinery. The engine-shops have also been kept well going in material as well as repairs.

The colliery owners of South Yorkshire having given an advance of 10 per cent., and this having been accepted on the part of the men, work will now go on much as usual. There has been some talk of limiting the output so as to maintain the advance; but it is needless to state that were this done, and the men worked five instead of six days a week, they would be considerably worse off than they were before the advance was given. A good deal of coal is sent from the district to London; but as the owners have to pay 1s. 5d. per ton more for carriage than their Derbyshire competitors of course they are so much worse off. Steam coal has been in rather good request for the time of year, and during the last few days a much larger quantity than usual has been sent to Goole for shipment to several foreign ports, as well as to London, Plymouth, Wisbeach, &c. A good deal of steam coal, however, is sent under contract, and from which now no profits can be realised.

#### FOREIGN MINING AND METALLURGY.

The Belgian coal trade remains in much the same state. The general tone of the markets is good, as well in the Hainaut as in the province of Liège. The demand continues steady for almost all descriptions. Household coal is, perhaps, a little less in request. The demand for this description is, of course, not likely to increase until the winter sets in. A threatened strike in the Hainaut has been adjusted; this result is probably attributable to the fact that no further movement has taken place in prices. The demand for coal for metallurgical purposes continues considerable; but, at the same time, coalowners have not found it possible to advance prices, which are for the most satisfactory and generally remunerative. Coking coal is scarce, and coke has been fully maintained at former rates, except in cases of special competition, in which, perhaps, a slight reduction has been made. The demand for household coal has become rather more decided in Germany, and the enquiry for industrial coal continues good. Coal for gas-making purposes has also been in request. Prices have not changed, but previous rates have been well maintained. Deliveries of coal by railway have been active, but rains and floods have somewhat checked deliveries by water. The exports of coal from Germany to Italy continue to increase, and with improved railway communication they are expected to become much more considerable.

The Belgian iron trade has not experienced any material change. Orders have not been extraordinarily numerous; but, at the same time, there are few complaints in want of employment. General establishments are even very well occupied, and if work were a little more general everyone would have cause for satisfaction. There is, however, nothing surprising in the fact that some works might be more fully employed, since the dead season of the year is now commencing. There has been no fall in quotations, and a reduction appears impossible at the rates current for raw material. Quotations for coke and coal appear to be well established, and it is necessarily the same with pig. Under these circumstances, iron can scarcely decline in price. The administration of the Belgian State Railways is about to let contracts for 52 locomotives. The Belgian construction workshops are already pretty well occupied, and this increase of employment will ensure their future for some time to come. The administration of the Belgian State Railways will also let contracts towards the close of November for a considerable quantity of rolling-stock; Belgian industry can scarcely fail to profit from these further contracts. Pig has not experienced much change in prices upon the Belgian market. Casting pig No. 5 is quoted at 3l. per ton, with a difference of 2s. per ton. Refining pig has remained firm at 2l. 8s. to 2l. 10s. per ton for ordinary pig and mixed pig. The rates for iron have scarcely varied. A quotation of 5l. 8s. per ton for No. 1 is officially indicated by several circulars from works in the neighbourhood of Charleroi. No. 2 iron has remained at 5l. 16s. per ton, while No. 3 has made 6l. 4s. per ton. Plates have been quoted at 7l. 12s. per ton. Boiler plates at 8l. 8s. per ton.

Prices have not varied upon the Paris iron market, merchants' iron still standing at 7l. 16s. per ton. Under these circumstances it is impossible for merchants to lay in supplies at the works of the Nord, which are still standing out for 7l. 16s. per ton for merchants' iron. The only possible explanation of the absence of any margin between the prices current at the works of the Nord and upon the Paris market is, that Parisian merchants have contracts upon very moderate terms with Belgian works. Building operations continue active at Paris. In the Quartier Marbeuf alone it is estimated that 15,000 tons of iron will be required in connection with houses now in progress. The imports of iron minerals into France in the first nine months of this year amounted to 1,062,481 tons, as compared with 982,936 tons in the corresponding period of 1881, and 892,328 tons in the corresponding period of 1880. The total of 1,062,481 tons, representing the imports in the first nine months of this year was made up as follows:—Belgium, 83,728 tons; Germany, 280,687 tons; Spain, 377,350 tons; Italy, 70,766 tons; Algeria, 241,559 tons; and other countries, 8391 tons. The imports of Spanish minerals into France appear to be very largely increasing, while the imports of Algerian minerals exhibit little or no progress. The exports of minerals from France in the first nine months of this year were 85,205 tons, as compared with 61,703 tons in the corresponding period of 1881, and 85,352 tons in the corresponding period of 1880. Only unimportant changes have occurred upon the German

iron markets. Some of the proprietors of blast-furnaces in Westphalia have slightly advanced their terms. The Steelworks of the Rhine at Ruhrort have obtained an order for the rails required for a railway about 37 miles in length in Greece.

### Meetings of Public Companies.

#### RUSSELL UNITED MINES.

The annual general meeting of shareholders was held at the mines, near Tavistock, on Monday. Mr. S. LANG, of Bristol, presided, and there was a large attendance.

Mr. EDWARD ASHMEAD, F.C.A. (the secretary), after the minutes of last meeting had been read and confirmed, read the reports and statement of accounts and the subjoined annual report of the directors:—The directors herewith submit the annual balance-sheet, made up to the end of the first financial year, the same having been duly audited. The amount of current assets over liabilities at date of the balance-sheet (exclusive of 6300*l.* uncalled capital) is 644*l.* 2*s.* 4*d.* Since then three monthly cost-sheets have been paid, and the credit balance reduced to 74*l.* 9*s.* 4*d.* For the working of the mine a further small call on the shares in the company will be required. Since the incorporation of the company in July, 1881, a great deal of work has been done in and on the mine. At surface a very important operation was that of connecting the large water-wheel with the pumping-gear at Stephens' shaft by means of a line of rails more than half-a-mile in length. This was most successfully accomplished, and the wheel set to work on Dec. 4, 1881. The directors refrain from entering into details on the underground work, reports with full details having from time to time been printed and sent to the shareholders. They must, however, congratulate the shareholders on the successful cutting, early in this month, of the Great North Lode, by the 97 fms. level cross-cut. Capt. Bray's report, which will be found attached, will give the shareholders the latest information on the character and value of the lode as far as it has yet been seen. The directors have to report their great regret at having lost, during the first year of the new company, their late esteemed manager, Capt. John Gifford, whose decease took place very shortly after the completion of the work in connection with the wheel.

The following supplementary report was presented by Capt. Bray:—In handing you my report of the mine since the 18th inst., I beg to state that we have cut through and opened the lode east of the cross-cut, at the 97 fathom level, 2 fathoms. The lode is fully 5 ft. wide, although not rich for copper ore, and the prospects are most encouraging. At the present time the lode is well out on the upper part of the level about 7*l.* 10*s.* per fathom. The bottom part of the lode is not so good; I look upon it as a strong, masterly, promising lode, going into new ground for more than a mile in length, and I consider it a very important discovery, and there is every reason to expect that good results will follow as we extend the levels east and west from the cross-cut, as indications may lead us. We have water-power to work this property to any extent. The lode in the 55 fathoms level still continues to yield small portions of copper and molybdenite, but not sufficient to value. At Stephens' engine-shaft the water is very powerful, and there is a difficulty in keeping it out with our present lifts. However, I hope the heavy floods will cease, or our sinking will be rather slow.

The CHAIRMAN, in moving the adoption of the reports and statement of accounts, expressed his pleasure at seeing so many shareholders present, because it showed their deep interest in the mine—an interest which he only hoped would last. (Hear, hear.) He asked them to receive the reports, because he believed those reports were fair and honest ones, which was a very important thing now-a-days. The accounts also he considered satisfactory. He showed them to an old mining man the other day, who was astonished that so much had been done at so reasonable an outlay. The new wheel and its connection which had been brought up the valley was an excellent piece of workmanship, and great credit was due to their captain for the way in which he had carried it out. (Applause.) It would prove very important by-and-by, when they had to pull great quantities of good copper ore. (Hear, hear.) The directors did not enter into details respecting the mine in their reports, but they were constantly receiving satisfactory reports from the agent, although his reports had not been too glowing. He thought reports of that description had a good deal of weakness in them. (Hear, hear.) In the matter of future management he could only say he represented few friends in Bristol. His uncle had been connected with the mine since its commencement, and he was perfectly satisfied that the only way to conduct the mine satisfactorily was to work it thoroughly. (Hear, hear.) He believed the other shareholders would feel with him that they must not adopt a pettyfoggish policy in working the mine, but that they must do it well, and then he felt sure that if there was any ore to be got they would get it. (Hear, hear.) He concluded by expressing a hope that their next meeting would be in every way a thoroughly satisfactory one. (Applause.)

Mr. HAMILTON, in seconding the adoption of the reports and accounts, said he could endorse every word which the chairman had uttered with regard to the management of the mine, from the fact of the interest he and his friends in London had in the concern. He had taken some little pains to see that things were as they could be wished if the mine belonged to one man, and that man a rich one, matters could not have been carried out in a better way than was the case there at the present time. (Hear, hear.) They did not want to wait for a good mine 20 years hence, but they wanted it as soon as possible, and they did not want to put it off for 50 years, for what they could do for it. (Hear, hear.) He had perfect confidence in the veracity of Capt. Bray, and it had been understood between the agent and the directors that nothing should emanate from them respecting the mine which would be calculated to convey a false impression. If there was ore in the mine they were determined to get it, but they would not say it was there if it was not. He thought it would be found that mine was being worked as cheaply as any mine in the two counties. What the directors did was done without any expense to the mine. (Hear, hear.) There were no expenses incurred in the shape of directors' fees, and he was perfectly certain that there was not a shilling wasted. With regard to the new lode, of course, it had never been opened upon before. It would be a wonderful thing if they were to make a cross cut, and go to the very centre of a lode of rich ore. Things of that kind happened sometimes, but very rarely; but looking at the specimens that came out of the lode, where could they find a lode equal to it? (Hear, hear.) He had never known one, and he had had a great deal of experience in Cornish mining. In about a fortnight, when the air-pipes are in, they would probably be able to begin driving east and west, and by-and-by they would be able to have a rise in the back of the level. They would have to take ore to market as speedily as possible, in order to lessen the cost of working the mine. With regard to the East Russell shaft, it was a speculation; but there was reason to believe, from what had taken place at the old East Russell, that the prospects were good. Of course any man who went into mining knew the uncertainty of it. If they were certain that ore would be plentiful as clay it would be of very little value, but the uncertainty of procuring it augmented its value. Having referred to the satisfactory manner in which the present machinery had been set up, the speaker then said that the plan of meeting Mr. Paul, the lord's (Duke of Bedford) mineral surveyor, who he should imagine was not a very sanguine man—a laugh—but he was more sanguine than any of them with regard to the future prospects of the mine after what he had seen. He evidently believed there was a good mine there, and so did he (the speaker) if they could only use the means to get the ore out. After they had opened up the mine there were two ways by which they might develop it. They might take the water out at South Bedford shaft, which was 30 fathoms below Mathew's shaft, and then drive a cross-cut north to cut the lode, or they might sink Mathew's shaft. That would be a question for mining men to decide, but no time would be lost in cutting under to see what was there. If ore was there they would get it, and if it was not they would not. (Laughter and applause.)

The Rev. O. SUMNER observed that there had been nothing said in the reports about a boring machine.

Mr. HAMILTON said that was a matter which would not be lost sight of when operations in the mine were sufficiently advanced for it.

Mr. SUMNER expressed himself as perfectly satisfied with the explanation, and the motion before the meeting was carried unanimously.

Mr. Waddington was unanimously re-appointed auditor.

Capt. PHILLIPS expressed his confidence in Capt. Bray, and said he could feel quite safe while the agency at the mine was in Capt. Bray's hands. (Hear, hear.)

Capt. BRAY said he had no hesitation in expressing his firm conviction that the best thing they could do in the future was to thoroughly prosecute the working at great north lode, which was now intersected at the 97 fms. level. The appearance and character of the lode were all that they could expect. It was very promising, and there was no reason why they might not get a return of ore as they proceeded east and west at the cross-cut. They might then reach a bunch of ore at any time. They had driven the 55 east a great distance, but the lode varied. He had been of opinion since they had intersected the north lode that it would be well to suspend operations in the 55 for the time being, and apply all their resources to the bottom level on the north lode, although indications would warrant a further development in the 55. They would have to drive the levels east and west 10 fms. from the cross-cut, then they would see what the levels were before clearing up the South Bedford shaft. In the 97 they had 60 fms. or 70 fms. south on the north lode, and in their old lode, where they made the dividends, they had not so much back as they had now, and it is probable that they would have great bunches of ore as they rose and extended both ways. Then there was the South Bedford shaft, which was acquired by the new company about 12 months ago, and was about 70 fms. to the west at present shaft, and 30 fms. below the level of the lode. They would have to drive the levels east and west 10 fms. from the cross-cut, then they would see what the levels were before clearing up the South Bedford shaft. They had an abundant supply of water on the mine for all purposes, and would never require steam power. (Hear, hear.) If the north lode proved to be good in these drives it would be a question whether they should work in the direction of the South Bedford shaft, and then cross-cut from the bottom of the shaft to the great north lode. They would then have a cross-cut to intersect the lode in about 10 fms. driving. At Stephens' shaft they had a great deal of trouble about the flooken that was seen at the 27, which crushed all the timber, and consequently they were obliged to come up to a certain point and start a new shaft in a given line and in a certain direction, which he strongly recommended to be continued down to the 45 or 50, where they might fairly expect to meet good and profitable results, as was the case at East Wheel Russell at about the 40, exactly under the flooken, where they had their richest bunches of ore; and if it applied to East Russell why not to Wheel Russell? (Hear, hear.) Capt. Bray concluded by saying they would soon have a great deal to do away with the drawing-lift. (Hear, hear.)

Mr. T. W. GREENFIELD, in proposing a vote of thanks to the directors, said it was well known that as a rule directors' fees were an expensive item in most mines, and a great deal was swallowed up in directors' expenses and London management. In connection with this mine the London management was extremely moderate, and the directors not only received no remuneration, but paid

their own travelling expenses, which was almost more than the other shareholders could expect them to do, and they should feel very much obliged to them for their gratuitous services. (Hear, hear.) He hoped the good attendance at that meeting would convince the directors that it would be well to hold the meetings on the mine occasionally, as it afforded local shareholders an opportunity of attending, and conducted to good feeling among the shareholders generally. (Hear, hear.)

The vote of thanks having been seconded and presented, the CHAIRMAN acknowledged it, and said his uncle had been connected with the mine from its commencement, although he feared at one time he hardly did it justice. He (the speaker), with others, was backed up by their London friends, and the result was that they were now really trying the mine. (Hear, hear.) He thanked the shareholders for the way in which they had given their support, and assured them that the directors had done their best to promote the interests of the mine. They had felt that the mine business was a very important part of their work, and he was glad when he received the agent's report every Saturday. Whenever they held a meeting of directors they considered everything not as in relation to a speculative mine, but as relating to a good honest undertaking. They were providing employment for people in the district, and he hoped that by-and-by the mine would be only second to the Devon Great Consols.

Captain PHILLIPS said he felt disposed to endorse what Capt. Bray had suggested in reference to the future way of working the mine. It was the practical way to go to work to prove the new lode was intersected, and if it turned out according to the expectations of practical men, there was the western shaft on Impham lode to be cleared out, and a cross lode to be intersected. He had been in the habit of travelling over the property for the past 30 years, and he felt convinced that there was not a piece of mining ground in Devon or Cornwall so much deserving of development as that ground was. The character of the strata was such as to lead one to entertain great expectations concerning the future prospects of the mine. So far as the lodes had been developed they offered inducement for further development, and they all seemed to say "Try us further." He thought they should go further and deeper, and he believed that if the mine was well worked it would have a grand future before it. He concluded by expressing his confidence in the directors.

A vote of thanks to the Chairman, proposed by Mr. TURNER, and seconded by Mr. CHICKER, brought the meeting to a close.

#### WEST POLBREEN MINE COMPANY.

The four-monthly meeting of shareholders was held at the offices, Walbrook, on Wednesday. On the motion of Mr. LENNOX, seconded by Mr. COUZENS, the chair was occupied by Mr. JOHN B. REYNOLDS. Mr. F. J. HARVEY (the secretary) read the notice calling the meeting. The balance sheet was also read, showing a balance of cash at the bankers of 453*l.* 10*s.* with no liabilities due and unpaid.

Mr. HARVEY added that the accounts had been audited by Mr. S. Payne, of Exeter, a shareholder, who had appended his certificate as to their correctness. He (Mr. Harvey) also read the agent's report, as follows:—

Oct. 31.—Since the meeting held on July 6 we have driven several fathoms on the East lode north of Wheel May shaft, but so far as seen the lode is poor. In the eastern shaft, adjoining New Kitty: at this point we have confined our operations to driving the cross-cut north at the 40. Last week we intersected Dorcas lode, which is from 3 to 4 ft. wide, producing tin. More of it will be seen in a few days. In the adjoining mine (New Kitty) this lode has been worked on very extensively, from which large and profitable returns of tin have been made. I now propose to open both east and west on the course of this lode, and I am hoping we shall find such as to give us satisfaction, and enable us to realise some of the expectations which we have been so long entertaining. It is said to give a positive opinion as to our immediate prospects, but it is right that I should state that I attach considerable importance to the discovery of this lode.—WM. VIVIAN.

The CHAIRMAN said—Gentlemen, the most pleasurable duty as far as business is concerned which I have to discharge from time to time is that of presiding over a meeting of shareholders who are engaged in prosecuting mining industry in the parish of St. Agnes. It so happens that those mines in which I am interested, and which are perhaps of peculiar merit, are being so economically worked as to ensure, at any rate, a minimum risk with a maximum advantage. I have before given you to understand that the object of the West Polbreen Company has never been to make a mere show, but rather to aim at limited explorations, with a view to getting a good basis for permanent operations. This task has, no doubt, been rather trying to one's patience, but I am glad to say it is now likely to be crowned with complete success. Capt. Vivian will inform you, with that candour which has always characterised him, that the cutting of the supposed West Kitty lode in the extreme western part of West Polbreen did not, in his opinion, justify the selection of that spot for the exploration. He considered he resolved to himself to direct his attention to the more eastern part of the property about 70 fms. from the New Kitty boundary. Since the last meeting of the shareholders he has chiefly confined his operations to this particular spot, and I am now gratified to state that within the last 14 days he has cut a lode which promises at any rate to be one of the leading lodes of the district, and such as will add considerable lustre to the fame of the locality. The indications of the lode, as he will tell you, are unmistakable. At present, being only seen 40 fms. from surface, it cannot be expected to yield tin. Nevertheless, there are not wanting reasons for hoping that even at this shallow depth it may prove to be remunerative. For my own part, as I said at the last West Kitty meeting, I have no doubt that this western hill of St. Agnes is teeming with mineral wealth, and it is my belief that in course of time other people will be as enthusiastic in the matter as I am. At any rate, we have in the fact of this lode being cut sufficient evidence that those who seek diligently, persistently, and methodically, without losing heart, are likely to have their efforts amply rewarded. (Cheers.) It must be remembered that the price of tin is at present very low, and means indicative of its real worth. The public are slow to realise the fact that when a lode of a decidedly promising character has once been discovered in a district like this there are ten chances to one in favour of considerable wealth being not far off. Such was the position in West Kitty when the lode which is now turning out so rich was first cut. The shares were then below 20*s.* each, simply because the lode was merely promising without any value being put upon it. (Cheers.) We must endeavour so to work our property as to make the expense of its development impossible at the outset, and to present to our shareholders a prospect which may be made from time to time will be so insignificant as scarcely to be felt by the shareholders. I am able to speak on this subject with some authority, for I happen to know that this company is one of the most influential and wealthy connected with this office, and this fact makes the committee additionally anxious that there should not be one farthing spent beyond that which commends itself to the judgment of men of strict business habits. At the same time it will be a pleasing duty when we are able to inform you that the lode alluded to in this statement has been so developed as to justify such an expenditure as the more ardent spirits amongst us are wishing to make. In matters of finance as much judgment is necessary as there is in the local management of the mine itself, and we find that by economy and judicious expenditure the confidence of the public may be commanded to such an extent as always to ensure a good premium for the company's shares. We also find that what an investor wants in an investment such as this is not only certain gain, but unquestioned fair play. The positive certainty of profits in mining speculations it is almost impossible at the outset, under any circumstances, to hold out, and this fact is appreciated by men of ordinary business capacity. Taking into account the large profits which are realised upon the success of a speculation of this nature it becomes not only advantageous, but really attractive. (Hear, hear.) You will observe by the balance-sheet now before you that as usual there are no arrears of call, and that the substantial balance we have in hand altogether removes the necessity of a call being made at this meeting. (Cheers.) When next we have the pleasure of meeting I indulge the sanguine expectation that our prospects will be even brighter than they are today, and I can only congratulate you, gentlemen, on my being able to mention to you (after mature consideration), so much as I have said to encourage and to cheer you. (Loud cheers.) In conclusion, the Chairman moved the adoption of the balance-sheet and agent's report.—Mr. COUZENS seconded the motion.

The CHAIRMAN: Gentlemen,—Capt. Vivian is here, and will be happy to answer any questions with respect to the lodes, and the position of the workings.

Mr. LENNOX asked what was the value of Dorcas's lode?

Capt. VIVIAN: Well, we do not put any value upon it at present. We have only just cut through it, and we cannot put any value upon it. In another week we can say more about it.

Mr. LENNOX: Is the stratification favourable?—Capt. VIVIAN: Yes; the stratification is very favourable.

Mr. LENNOX asked how far the Dorcas lode was from the New Kitty boundary?

Capt. VIVIAN: About 70 fms. I may say that there is not enough of the lode seen to enable me to give a decided opinion upon what it is going to be.

When I saw it, it was not cut through, but I said it was another lode, and I shall be better able to judge what it is going to be. It is a fine, strong looking lode. I had my doubts whether there was a lode there at all. This part of the mine had been worked by some former workers, and they drove this cross-cut a great many fathoms, and cut two or three branches, and drove some fathoms on them, but they were small and poor. No doubt they thought it was the Dorcas lode split up into branches. I thought I should like to go a little further north with the cross-cut, as cross-cutting is the life and soul of mining, and we have gone no farther than we have just struck this lode; I hope by the time I get back, and go underground, I shall see more of it, and be able to give you a report of it next week. (Hear, hear.)

Mr. COUZENS: Will you continue to drive the cross-cut?—Capt. VIVIAN: Not just now. We have not sufficient ventilation to work the two places at the same time. If I am satisfied that it is the Dorcas lode (which I have every reason to believe it is), we shall open east and west upon it. If not, we shall still cross-cut further.

Mr. S. PAYNE (Exeter) said he had audited the accounts, and found them correct in every respect, and he must say that the very excellent way in which the books and accounts were kept reflected the highest credit upon the able secretary, Mr. Harvey. (Hear, hear.) From all he had been able to ascertain, after careful enquiry, he believed the shareholders possessed a great and grand property in West Polbreen. Capt. Vivian had gone on slowly but surely; he did not expend money foolishly, but he spent it on fair-play work, and he had no doubt whatever that if the shareholders had the luck and perseverance to continue, they would be well rewarded for their investments in West Polbreen.—The resolution was then put and carried unanimously.

The CHAIRMAN said the next matter was the re-election of the committee, who were not paid for their services, but who performed their duties most conscientiously and faithfully.

Mr. COUZENS moved that the cordial thanks of the shareholders be presented to the committee, and that they be re-elected.

Mr. LENNOX said he had very great pleasure in seconding the motion. The shareholders were under great obligations to the committee for the gratuitous services which they rendered, and the practical way to acknowledge those obligations was to re-elect the committee. (Hear, hear.)—The resolution was put and carried unanimously.

The CHAIRMAN: Well, gentlemen, we have had a brief but a very pleasant meeting. If you have nothing more to say, and no further questions to ask, the business of the meeting is over.

Mr. LENNOX moved a vote of thanks to the Chairman for his able presidency, and for the admirable explanation he had given of the company's affairs. The shareholders were well satisfied that the management of their affairs was in most able hands, and no words were required to recommend the resolution to the adoption of the meeting. (Hear, hear.)—Mr. ROBINSON seconded the motion, which was put and carried unanimously.

The CHAIRMAN, in acknowledging the compliment, said that they were proceeding slowly but surely; and if at any time he had thought there was no prospect of a good return he could only say that the shareholders should at once be informed of it. (Hear, hear.) But as he had said, he believed they had an excellent property, which would well repay them for the outlay and labour bestowed upon it. (Cheers.)—The meeting then broke up.

#### NORTH HENDRE LEAD MINING COMPANY.

The ordinary general meeting of shareholders was held at the company's office, Chester, on Monday.

Mr. H. R. BOWERS, Chairman of the board, in the chair.

Mr. J. JONES (the secretary) read the notice convening the meeting, also the minutes of the preceding one, and the reports and accounts were submitted.

The CHAIRMAN, in moving their adoption and that a dividend of 8 per cent. be declared on the paid-up capital of the company, free of income-tax, payable on Nov. 2, explained that the past year had been a most anxious one for the directors; they had had to pay more attention to the working of the mine, and had been compelled to contract the expenses as much as possible. If they had not done so they would have appeared before the shareholders at that meeting without any dividend at all instead of one of 8 per cent. The mine during the earlier months of the year was very poor, producing only 50 tons of ore per month, instead of about 100 tons, and it must be remembered that the cost of working the mine is the same whether 50 or 100 tons of ore are produced. This disadvantage added to the extremely low price of ore forced upon the directors the probability of being unable to pay any dividend, but the mine having greatly improved during the latter months of the year they had succeeded in obtaining a balance in favour of the company which would pay the dividend recommended. Those who had examined and compared the last year's accounts with the present year's would observe that last year they closed the accounts with a stock in hand of 340 tons of ore, this year it was 230 tons only. Those who were familiar with the working of a company knew the difficulty there was in calculating the amount of an interim dividend, inasmuch as the accounts must show the balance in hand without taking into account the stock which may be in hand. With regard to the mine he thought that it never had a better prospect. The output had been most favourable during the last five or six months. Most of those present would be aware that in consequence of an accident he had some time ago he had been unable to go down the mine as regularly as he used to do, and when he went down on Oct. 15, in company with Mr. Bromley and Capt. Eddy, he was amazed at the great development of the property, and as Captain Eddy says in his report "he had never seen it altogether so rich as at present."

More showing such evident signs of permanency. There is more ore ground opened out, more reserves of ore in view, and the rich deposits are spread over a much larger area than he ever saw them in the mine before, and he (the Chairman) was sure that the shareholders had a much more valuable property than many of them were aware of. A report was published yearly by the Miners' Mining Company, which furnished the average price of ore since the year 1855, and showed that 1879 was the lowest, taking the whole period, but taking the average of the last five years the last year was the lowest. Still he hoped, judging from present appearances, the directors would be able to declare an interim dividend during the ensuing year. Taking all things into consideration he considered the 8 per cent. for this year was fully equal to if not better than the 10 per cent. declared last year. The directors in reporting to the shareholders had thought it well to make an abstract from a very able article published in the Times of Aug. 19, on the prospects of the lead market, and he thought that there could not be any doubt but that the lead trade would undergo a very decided change for the better before long. He thought the position of the property satisfactory considering the state of the trade, and when the price of ore gets up the working of course will be much more profitable. He had, therefore, to congratulate the shareholders on the appearances of their property, and formally moved the adoption of the reports and accounts, and the declaration of a dividend of 8 per cent. on the paid-up capital.

The resolution was seconded by Mr. ADAM EYTON, of Llanerchymor, supported by Mr. URIAS BROMLEY, of Chester, and on being put to the meeting was unanimously carried.

Mr. W. M. GRAY, of Manchester, proposed, Mr. URIAS BROMLEY, of Chester, seconded, and it was resolved—That Messrs. Henry Simpson and Robert Wright be re-elected directors of the company.

Mr. ROBERT WRIGHT, Bodfari, proposed, Mr. WM. EVANS, Chester, seconded, and it was resolved—That Mr. J. E. Edwards be appointed auditor for the year at a fee of five guineas for each audit.

Mr. JAMES GIBB, Bodfari, proposed, Dr. WILLIAMS, Mold, seconded, and it was resolved—That the warm thanks of the meeting be given to the directors for their efficient management during the past year, and that the sum of 20*l.* be voted to them for their services during the ensuing year, exclusive of second-class railway fares.

Mr. J. KENYON, Manchester, proposed a cordial vote of thanks to the Chairman, in seconding which Mr. WM. ROWLAND, of Manchester, said that since the company was started 12 years ago 10,000 tons of ore had been raised, realising 120,000*l.*, of which 50,000*l.* had been divided amongst the shareholders.

The resolution was unanimously carried, and the proceedings terminated.

#### GUNNISLAKE (CLITTERS) MINE

The ordinary four-monthly meeting of adventurers was held at the mine on Tuesday.—Mr. J. C. ISAAC presiding. The attendance included the Rev. O. SUMNER (of Bristol), and Messrs. T. Hamilton, E. Story, T. W. Greenfield, C. Isaac, A. Francis, J. Pearce, T. Knight, H. Pearce, S. D. Nicholls, E. Traad, J. Turner, W. Dymond, S. Norsworthy, — Harvey, R. Skinner (purser), — Mathews (the engineer), T. Horswill (auditor), Capt. W. Skewis (managing agent), and Capt. C. W. Secombe and C. Secombe, the other agents at the mine.

The PURSER read the statement of accounts, which showed a balance of 724*l.* in hand.

Mr. T. HAMILTON said they had every confidence in the committee, and he moved that the accounts submitted be passed.—Mr. FRANCIS seconded the proposition, which was carried unanimously.

The CHAIRMAN said they were met thereto-day under very favourable circumstances. They had been spending a good deal of money during the last three or four years in machinery and extra work for the further and proper development of this property. The work they had been anticipating doing for a long time was now very nearly completed, and it would be found from the reports of the agents and the committee what the cost had been, and the amount of work that had been accomplished. He thought in the future they would have a mine there with which no other mine in Devon or Cornwall could compare as a copper mine. They knew that in Devon and Cornwall there had been but one or two mines for many years that had even paid costs, whilst at Gunnislake (Clitters) they had done a great deal more than that, because they had spent 5000*l.* in the purchase of machinery, and during the past four months, in addition to realising a profit of 4000*l.*, they had spent more than 1200*l.* in machinery. He thought the mine was well situated to show there was not another property equal to that in the neighbourhood. (Hear, hear.)

The Chairman then submitted the following report of the committee:—"Your committee for several years have been advising the shareholders to spend large sums of money in the purchase and erection of machinery for the more economical and well working of the mine. They are now pleased to report that these works—the providing of pure water for the boilers, increased supply for the dressing-floors, and increased drawing power, have been completed, and it would be found from the reports of the agents and the committee what the cost had been, and the amount of work that had been accomplished. He thought in the future they would have a mine there with which no other mine in Devon or Cornwall could compare as a copper mine. They knew that in Devon and Cornwall there had been but one or two mines for many years that had even paid costs, whilst at Gunnislake (Clitters) they had done a great deal more than that, because they had spent 5000*l.* in the purchase of machinery, and during the past four months, in addition to realising a profit of 4000*l.*, they had spent more than 1200*l.* in machinery. He thought the mine was well situated to show there was not another property equal to that in the neighbourhood. (Hear, hear.)

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to this after the engine for lifting the water is put to work, and the 93 fms. of pumping work thrown off the pumping engine—Crease's South Lode. The man now engaged in clearing the level south of Bonny lode to enable the pipes to be fixed from the air compressor to the end of Crease's south lode, for the purpose of working the boring machinery there as on the Bonny lode.

Capt. SKELVIS said he thought they would be able to get the boring machinery on Crease's lode in about two months, judging from his experience of the ground. They could put a boring machine quicker in the bottom of the mine by means of a pipe than on Crease's lode, and he should like to see this done, and a cross-cut cleaned as quickly as possible for a boring machine at Crease's lode. The committee would decide at their next meeting whether they would drive the 123 west with boring machinery, or the bottom of the mine a short time.

Crease's lode had shown good results, but he impressed upon the shareholders that they would not find it productive without an expenditure. The way in which they developed this lode, and the western or deeper part of the mine would depend to a large extent on the consideration they received from the Duchy. If they met with the consideration they desired—and from their past experience of the liberality of His Royal Highness he hoped they would—he believed no other company in Devon or Cornwall would be prepared to make such sacrifice in order to thoroughly develop its property than the Gannishake (Cliffers) Company would. (Hear, hear.)

Mr. KNIGHT spoke of the good results which had been produced from Crease's lode in time past, and expressed a hope that it would soon be worked again.

Capt. SKELVIS, in reply to the Rev. O. SUMNER, said about 200 hands were engaged on the mine.

Mr. J. PEARCE proposed, Mr. TRAID seconded, and it was resolved that the report be adopted.

The motion of Mr. HAMILTON, seconded by Mr. DEMOND, it was resolved that the old committee be re-appointed.

The CHAIRMAN, in answer to a question by the Rev. O. SUMNER, as to whether it was likely that the expenditure of the mine would be much increased, said he hoped it would be doubled, because if the quantity, quality, and price of ores kept up, they must have a good mine, let the costs be what they might. (Hear, hear.)—The proceedings terminated with a vote of thanks to the Chairman.

#### THE PRINCE OF WALES SLATE COMPANY.

The ordinary general meeting of shareholders was held at the offices, Clement's-lane, on Tuesday, Mr. H. L. HAMMACK in the chair.

Mr. G. J. GRAY (the secretary) read the notice convening the meeting. The report and accounts were taken as read.

The CHAIRMAN said the report issued to the shareholders gave full information as to the work now in progress at the Prince of Wales Quarry, which was rendered necessary by reason of the tunnel driven across the western vein for a distance of 81 yards not being sufficiently deep, the rock met with in it not being, therefore, solid enough to open for slate-making. The directors were, however, assured both by Mr. Kellow, who had charge of the work, and by another experienced practical quarry manager, who had, at the request of the directors, visited and carefully inspected the property in July last that there is every reason to expect purer and firmer rock in depth. The Deputy-Chairman had visited the property in June last, and after a careful examination on the ground considered that it was desirable the work suggested should be carried out, and they had, therefore, let a contract to sink a shaft in the vein to a depth of 47 yards below No. 5 floor, and to drive a level at that depth for 25 yards across the vein. The secretary would state the position of this work at the present time.

The SECRETARY showed by means of a cross sectional plan of the quarry that the shaft, which at the date of his visit in August last had just been commenced, had now been sunk from No. 4 floor to a depth of 20 yards, the first 18 yards of the shaft being sunk through the debris from the fall of rock that occurred from the eastern side of the quarry three or four years ago. This part of the shaft, of course, required careful timbering, and had been rather difficult work. The solid rock now, however, been reached, and the contractor had erected boiler, air-compressor, and drilling machinery, so that he may be able to carry on the work with great possible speed. The weather had considerably retarded the work, and there had been a great influx of water in the shaft to contend with; but the contractor had put up a pump, and hoped now to make better progress. The opinion of those in the locality that know the property was that as depth was attained the rock would improve, and he might mention that the quarry adjoining the company's property on the north-east had just been restarted, after being idle for a great many years, by some local gentlemen, so that it seemed to be thought that near the Prince of Wales Quarry, at any rate, there was no ground of slate of the quality of the company's property.

Mr. LAMBERT (Deputy-Chairman) said that he went into the tunnels at the quarry, and certainly there seemed to be good slate in the bottom of the cross tunnel in the western vein. He considered it was advisable to get the shaft down, so that this rock might be cut into at a lower depth.

A SHAREHOLDER said he believed there was plenty of good slate in the quarry, but he feared the present company would not derive the benefit.

The CHAIRMAN said if there was good profitable rock in the quarry the directors would use every exertion to get it into the market. At any rate, he was of opinion that they should carry the work now in hand to completion, and he hoped the shareholders would so far assist them by subscribing the small further amount of capital needed.

The resolution for the adoption of the report and accounts was put and carried.

On the motion of Rev. L. LOGAN, seconded by Mr. BELLAIS, a vote of thanks was given to the Chairman and the directors for their services, and they were re-elected.—On the motion of the CHAIRMAN the auditor, Mr. E. Brooks, was re-elected, and the proceedings terminated.

#### THE DEVALA PROVIDENT GOLD MINING COMPANY.

An extraordinary general meeting of shareholders was held at the Cannon-street Hotel, on Monday (Mr. F. PROPERT in the chair), for the purpose of considering and determining what course should be taken with reference to the petition which has been presented for winding-up the company.

Mr. WM. EDWARDS (the secretary) read the notice calling the meeting.

The CHAIRMAN said they were met to consider the best mode in which the liquidation of the company should take place. There was no doubt it was desirable that the liquidation should now be carried out, and the great object was to save as far as possible, and to the fullest extent, the assets of the company which now remained.

Before proceeding further one matter had occurred which rendered it necessary to make some comment upon it. Since the meeting was summoned a circular had been addressed to the shareholders of this company by one of the shareholders, Mr. J. M. Henderson, who described himself as a holder of 300 shares. Mr. Henderson had taken the initiative in proposing certain steps which were in the interests of the general body of shareholders, and which the directors saw the necessity of carrying out. Every shareholder had a right to send circulars, but he objected to one thing in connection with this circular, and that was that Mr. Henderson described himself in his circular as the holder of 300 shares, but he omitted to state that he was the holder of 272 of the 5000 shares issued to the promoters. The great object which the present directors had had in view all through was to upset the issue of these 5000 shares. Mr. Henderson, in his circular, appeared as the holder of only 300 shares, and at the same time wishing to advise who the liquidator should be; therefore, the directors thought it right to call the attention of the shareholders to the fact that Mr. Henderson was more largely interested than appeared in the circular, for he was the holder of 272 of the 5000 shares which he had referred to, and if the issue of these 5000 shares was not upset, an additional 15s. per share would have to be called up from the shareholders. Under those circumstances he left the shareholders themselves to judge whether it was advisable to support Mr. Henderson's liquidation, or whether some better course should not be pursued. The object of the present directors had been to reduce the expenses to the lowest point, and to cut down the outlay in every way. Shortly after they took office they had to meet a claim which they did not in the least expect—a claim of certain Australian miners who had been engaged to go to India to be in the company's employ, but when they reached India they were found not to be wanted, but the company were bound to pay them. The claim by the Australian miners was between 5000 and 6000, but the directors succeeded in settling it for 3512, but a portion of that amount would be obtained from the sister company—the Walla Walla Gold Mining Company. There was a good mix up of the arrangements, and no doubt a portion of the miners were engaged for the use of the Walla Walla property, and the directors would make a claim against the liquidator of the company in due course. The board had also to consider a claim of a serious amount put forward by Prof. Simons, who was in India considerable time, and did a good deal of work for the company as well as for the company. The claim was between 5000 and 6000. The directors were anxious to meet Prof. Simons' views, and offered him 3000, which they were advised the company were liable for, but Prof. Simons sent a further claim, and would not take less than 3500. From certain information which they obtained the directors thought that the original price which they had offered was too liberal, and they decided to let Prof. Simons do his best, and to let the claim go on, and it was still pending, and he did not think that Prof. Simons would get so much as the board originally offered him. The amount of calls in arrears, according to the last balance-sheet, was 77000. The directors had given the shareholders a long time to pay up, but they did not respond to the extent anticipated, and final notices had to be sent out, and proceedings had to be taken. As a result up to the present time a little over 30000 had been received, leaving about 47000 due. He was afraid that a number of the shareholders never would pay up.

A great number of persons took more shares than they ought to have done, and although a considerable portion would be recovered, there would be a considerable deficit when the liquidation took place. The cessation of expenditure on account of looking after the mine in India took place immediately after the present board were appointed, when the mining engineer and other gentlemen were dispensed with, and other expenses put an end to. With respect to the coffee estate the directors had to decide whether they should allow a coffee plantation to become a barren waste, or whether, for the sake of disposing of it in future, it was worth while to expend a certain amount in keeping up the cultivation. The board came to the conclusion that there would be a certain value attached to it as a coffee estate, and decided to make a certain expenditure. The original estimate which the agents in India sent was 5352 per annum; the directors thought that a larger sum than they were justified in expending, and they reduced it as far as they could, and they had authorised an expenditure of 4000 for the past year. He did not think a penny of that would be lost, as the amount realised would about balance the expenditure. They had the satisfaction of knowing that upon a certain portion of the estate the cultivation was going on, which would always give it a certain value. A share was put forward by a solicitor, on the part of one of the promoters, for a very large sum. The directors did not know what it meant, except that the

promoter thought he was entitled to something, and put the largest sum he could possibly claim. The directors acknowledged the letter, and had never heard any more of it; and the directors were assured that the promoter had no claim against the company. As regarded the liquidation, he would impress upon the shareholders that it was of the utmost importance to upset the issue of 5000 of fully-paid-up shares to the vendors in part payment of the property. He was advised that there was every prospect of succeeding in doing so. It was not now advisable to go into the method by which it would be done, but he believed there would be no difficulty in upsetting it. There was a sum of 6000, paid to the promoters by the late directors in lieu of 5000 shares. He, as a director, was clearly of opinion that that sum should never have been paid, and some steps must be taken to recover it. There was also an amount of 15000 for preliminary expenses, which were very large; he had tried all he could to get information about it, but could get no further details. It would be for the liquidator to decide how far they would take proceedings against the promoters, or someone else, bearing in mind the heavy loss which has been entailed. If they had rich people to deal with he should advocate pursuing them to the better end, but it was for the shareholders to consider whether, under the circumstances, it would not be throwing good money after bad. Of course various bogus claims might be brought against the company by the promoters, which must be resisted. There was a portion of the purchase-money still unpaid, and it was likely to be unpaid, for they would never get it out of the company; but the original vendors and promoters could give the company a good freedom (which he did not for a moment suppose they ever could do), the company would be compelled to carry out its agreements for the purchase. He might mention that, at the present time, the company had a balance of about 5000, at the bankers. The present directors, since their appointment, held 60 or 62 meetings, which showed that they had not altogether gone to sleep in the matter. (Hear, hear.) He moved: "That the company be wound-up voluntarily."

Mr. HENDERSON seconded the motion, and asked at whose instance was the petition for compulsory winding-up put on the file?—The CHAIRMAN said the petition was put on the file with the concurrence of the directors. The Walla Walla Company was ordered to be wound-up, and the directors had information that a petition was about to be put in respect to this company; and when a shareholder put the petition in he immediately informed the directors that he did it to protect his interests, and was willing to meet the views of the shareholders of the company to protect his interests and theirs at the same time. The petition was down for hearing on Nov. 4, and the board decided to allow as short a time as possible to elapse between this meeting and the hearing of the petition, so as to prevent any further hostile petitions being put on.

Mr. HENDERSON said he had seen the Chairman, and stated to him that the directors would not fulfil their pledge if they did not consult the shareholders as to whether the winding-up should be compulsory or voluntary.

The CHAIRMAN, Mr. KESSE, Mr. MONTGOMERY, and Mr. CONN (directors) said their object was to save every penny possible for the shareholders, and they believed the course now proposed would most readily effect that object.

The resolution, after some further unimportant and uninteresting discussion, was then put and carried.

Mr. POCKET proposed, and Mr. JAMES seconded, a resolution to the effect that the present board of directors be elected liquidators, the vote of the majority to be binding on the minority, with a remuneration of 3000, to be divided amongst them as they may deem fit at the close of the liquidation.

An amendment by Mr. HENDERSON, to the effect that the secretary be appointed liquidator at such remuneration as the shareholders may think fit, and that the present directors be appointed as a committee of inspection to consult, and advise with the liquidator was not seconded, and, therefore, fell to the ground.

The original resolution for the appointment of the present directors as liquidators was then put and carried, and the meeting broke up.

#### THE CENTRAL MINING COMPANY OF DORSTFONTEIN.

The ordinary general meeting of shareholders was held at the offices, Finsbury-circus, on Tuesday,

Admiral R. C. MAYNE, C.B., in the chair.

Mr. CHARLES DAVIS (the secretary) read the notice calling the meeting. The report and accounts were taken as read.

The CHAIRMAN, having expressed regret at the absence of Mr. Charles J. Posno, who had been obliged to leave for Holland, owing to the death of his father, went on to say—Gentlemen, I think the only remarks I need make, except to answer any question which any gentleman may wish to make upon the accounts, is to say that in the last report and in the Chairman's speech, you had a description of the two blocks; you know all about them, and about the number of claims, and about the capital, and it is no use going into that again.

Since this report was made out things have been much more cheering. The accounts show an excess of expenditure of 28,9500, and the directors propose to treat that as a loss upon trading; whether any portion may be differently treated hereafter we have not yet decided, but the feeling of the board at present is that we should wipe off everything connected with the working of the mine as far as possible. One of the "pulls" of the property over others is the large number of claims, and the small price at which they stand. As I have said, things now look more cheerful. The Quadrangle Block has been worked day and night, and instead of the total number of loads hauled 65,311, which is the number given when they were working about 8000 a week, in the Central Block there are 53 weeks of working, and the total loads hauled were 166,757, being an average of 3148 per week. There were 151,423 loads washed, the valuation for shipment being 11,7260, making 33s. 9d. per carat, or 1s. 5d. per load. In both blocks there was more dead work than was contemplated at the outset.

In the Central, particularly, we had to work down an immense lot of ground which was of no value whatever, and as we now know it would have been better if the greater part of this had not been washed at all. The manager himself was most anxious of finding something, and acted for the best in doing as he did. In the Quadrangle Block, as I have said, there were 65,311 loads hauled in the 21 weeks' working, the finds were 8088 carats, which sold for 18,2910, which made about 40s. per carat, or 5s. per load. Taking that at the present rate of working in the month of September, there was 70000 gross value on the Quadrangle Block, and if we take 45000 for working expenses, that leaves a profit of 25000, or about 30,0000, a year on the block alone, and I need not calculate what that would pay upon the capital. This block estimated day and night now, and we are in hopes of shortly improving, and that the profit on the Quadrangle will be sufficient to enable the manager to start the Central Block again. He has had offers from persons to work it, but these offers he had declined, as he thinks it worth while to start it, and work it for the company. I beg to move the adoption of the report and accounts.—Mr. H. B. WEBB seconded the motion, which was put and carried without discussion.

Col. CRAIG proposed that Ad. R. C. Mayne, C.B., and Mr. H. B. Webb be re-elected directors. Mr. LOGAN seconded the motion, which was carried. On the motion of Mr. LOGAN, Mr. WEBB, seconded by Mr. BROWN, the auditor, Mr. J. G. Griffiths, F.R.S., was re-appointed, with a remuneration of 25 guineas. Mr. ORLANDO WEBB said the accounts presented had an appearance against the company of 23,0000, but this arose from expenses which would not be incurred again, and a portion of which, in point of fact, was capital expenditure. There was the expense of the tramway and clearing the ground, 15,0000, the machinery, 23,0000, transport and charges in South Africa, 10,9530; all these sums had been expended, but the benefit would be derived all hereafter, and the company would, on the shareholders would enjoy the benefit of this expenditure. By working night and day they were turning over a much larger quantity of rich soil, which would produce large returns in time. He trusted that by this time next year the accounts would show a very large credit balance. He entertained no doubt about it himself, and he hoped the shareholders concurred in that feeling. (Hear, hear.)

The CHAIRMAN said the expense of transport and machinery was final. He mentioned that the Blankenberg View was a source of revenue, as the company was getting revenue by it from other companies.

Mr. O. WEBB said he believed that by working at night they got a great advantage, as robberies of diamonds were more easily effected by day than by night.

The CHAIRMAN said the night was better for working than the day. He might mention that joint action was being taken by the companies and by people out there, to put an end to the diamond thefts which went on to an extent of about 50 per cent of the finds. This could only be put down by combined action.

Another point on which action was about to be taken was the price of labour, which had seriously affected the working. The company had been paying something like 30s., where they should only pay 10s. or 15s. This point had luckily now reached such a pitch at the mines that the people were no longer able to vie with each other, and the directors thought that combined action would put the whole working of the mines upon a much sounder footing. He hoped in a few weeks to receive over here the decision arrived at out there, and he hoped that when that was received the companies would sink all jealousies and difficulties, and work for the general welfare of all. (Hear, hear.)

Mr. BROWN: I may mention that advices received by the mail this morning are to the effect that strong and combined efforts are being made to reduce the price of labour, and we hope they may be successful.

On the motion of Mr. RINGWAY, seconded by Mr. ORLANDO WEBB, a cordial vote of thanks was passed to the Chairman and directors, and the meeting broke up.

#### SIMON'S REEF CONSOLIDATED MINING CORPORATION.

A special meeting of shareholders was held at the offices, Cannon Street, on Tuesday, Mr. KITSON in the chair.

The SECRETARY read the notice calling the meeting, and the minutes were also read—not from the books but from foolscap sheets.

The CHAIRMAN formally moved the confirmation of the resolutions passed a few days since to wind-up the company, and appointing Mr. Young (Turquand, Youngs, and Co.) and Messrs. Kitson and Hodson liquidators, the last two gentlemen being directors.

Mr. MOORE asked if there was no minute-book, and on being answered in the affirmative said it was singular that the minutes should not be read from the book instead of from slips of paper.—The CHAIRMAN said they would be entered in the minute book immediately after confirmation.

Mr. MOORE pointed out that the minutes should have been entered in the book immediately after the last meeting, and then the minutes of the present meeting would have shown whether the resolutions were confirmed or not.

Mr. KIMBER (solicitor) seconded the Chairman's motion.

Mr. WHIFFIN said he never saw minutes presented for confirmation to a meeting on loose slips of paper, and he formally protested against it. Such minutes could be changed at any time. He now wished the register of members to be placed upon the table as it might be necessary to refer to it. On Oct. 25 he tried to inspect it, but was told that the register was closed from Oct. 13 to Nov. 13.

The CHAIRMAN refused to allow the register to be produced, and said that Mr. Whiffin's observations were not pertinent to the business of the meeting.

Mr. WHIFFIN went on to remind the shareholders that the company was registered on March 18, 1881. The first meeting was held within four months

but the annual meeting was held not in July as prescribed by the Articles but on Oct. 13, whilst the accounts were not presented till Oct. 2, and even then they were not signed by the auditors according to clause 133 of the Articles of Association.—The CHAIRMAN: The report of the auditors was real to the meeting.

Mr. WHIFFIN went on to say that the accounts made no mention of the liabilities to the vendors, so that the shareholders were left very much in the dark as to their position. Although the accounts were made up to the end of July the shareholders did not get them till the end of October. 43,330, was given to the vendors, and 135,000, shares with 5s. credited thereon had also been given them, together with 30,000, in fully paid debentures, or 63,1800. The shares held by the outside public represented 56 shares paid in full, and 3550 upon which 15s. a share had been called, and there were calls in arrear 4750, leaving a net receipt of 21830. The debentures taken amounted to 85900, or 71,7500, 13s. 4d. in all, as shown in this balance-sheet but stated differently. No information was given as to the claims of sundry creditors, but 90000, in cash in addition to the 63,1800, in shares and debentures was paid to the vendor. This cash payment he fancied came partly from the money subscribed by the outside public and partly from the money received from the Carta Para Company by way of a single share although clause 95 of the Articles provided that the directors should be shareholders, failing which a subsequent clause said they should be disqualified. He wanted to see the register for one reason, to ascertain if they were shareholders now. He was obliged to move an amendment—"That the resolution passed at the last meeting be not confirmed."

Mr. BEALL said he understood from Turquand, Youngs, and Co. that Mr. Young would only act if he were appointed sole liquidator. He (the speaker) strongly objected to two of the directors being liquidators.—The CHAIRMAN said this was the first time he had heard that Mr. Young would only act alone.

Mr. BEALL: You never asked him if he would join with you. That is what Mr. Young's partner (Mr. Bishop) said.

The CHAIRMAN said that the point raised by Mr. Whiffin was answered at the last meeting (Oct. 23). It had been held by the courts that the directors were perfectly right in holding meetings within the year. As to the liabilities which Mr. Whiffin said ought to have been put in the balance-sheet, the board did not admit them, and why place them in the accounts? Then where were the funds to come from which the property could be tested. An amendment was made with the Carta Para Company by which (if they do not come to grief) the property could have been tested. This company from the first never pretended to spend any money in gold mining, and as a matter of fact none of the companies had yet got gold. They could not in a few days make this affair an El Dorado, especially without spending money upon it. As to the directors, certainly they were shareholders.

Mr. WHIFFIN: How is it they are not registered?—The CHAIRMAN: They are registered.

Mr. WHIFFIN: Your registration is not correct. Why do you not produce the register? (Hear, hear.) If you have nothing to conceal why keep it back?

The CHAIRMAN: Because it is not usual to produce it. (Laughter.)

Mr. BEALL asked if the Chairman and Mr. Hodson were prepared to give their services in the liquidation for nothing?—The CHAIRMAN and Mr. HODSON replied in the affirmative.

Mr. BEALL pointed out that there had been more spent on the directors than on the property. They ought to wind it up for nothing, seeing that they had had for this company, and from the Carta Para as well, both companies had been in the same office, and the board meetings being held on the same day.

The CHAIRMAN: The directors have not taken half the fees they were entitled to.—Mr. BEALL: No, because they could not get more. You presented a petition as creditors and shareholders.

Mr. WHIFFIN: I am sorry, Mr. Chairman, that your explanations do not allow me to withdraw my amendment. We complain that you made any allotment whatever until you had sufficient money subscribed. (Hear, hear.)

Mr. MOORE seconded the amendment—"That the resolution passed at the last meeting appointing Messrs. Young, Kitson, and Hodson as liquidators, be not confirmed." Seven voted for the amendment, and nine against it. The amendment was, therefore, declared lost.—A poll was demanded by Mr. WHIFFIN, but declared not in order.

The CHAIRMAN: We have proxies for 15,000 shares.—Mr. BEALL, after an examination of the directors' proxies, declared that they were nearly all those of the vendors.—The original resolution was then put and carried by eight votes to seven, Messrs. Kitson and Hodson voting with the majority.

Mr. WHIFFIN: I protest against all the votes which Messrs. Kitson and Hodson have given to-day. Proxies are of no avail in those names.

A resolution was passed binding Messrs. Kitson and Hodson to take no remuneration for their services in the liquidation of the company's affairs.

Mr. KIMBER (to Mr. Beall): Won't you propose a vote of thanks to the Chairman?—Mr. BEALL: The Court of Chancery will do that. (Laughter.)

The meeting then closed.

MOUNT CARRIS.—At the meeting on Tuesday (Capt. Tregay in the chair), the accounts showed a loss on the nine months' working to end September of 21330, 5s. 11d., and a debit balance of 7327, 11s. 4d. A call of 5s. was made. The Chairman stated that there were 10 tons of tin on the floors not credited in the present accounts, and that all the calls had been paid with the exception of about 60.

A call of 5s. per share was made. The report of Captain Josiah Thomas, of Dalcouth, who had inspected the mine, was read, and considered to be highly encouraging. In his report Captain Thomas stated, that at the 53 fm. level a lode was met with 6 fms. north of shaft, and on being driven through, was found to be altogether 18 ft. wide; but it was partly met with tin. The north part of the lode for 4 ft. wide had a very fine appearance, and produced some rich tin stuff of a very promising character, showing a great improvement on anything met with in the upper levels. This part of the lode he thought was worth 40s. a fathom. The 50 cross-cut was still being continued north under the north lode and the carbon, and this cross-cut on being continued still further north would probably intersect the great tin lode which has produced such large quantities of tin in the mines to the south of it. In concluding his report Capt. Thomas said he considered that the prospects of the mine were of a very favourable character. The report of Capt. Charles Craze, who also had inspected the mine, was read, and found to be equally favourable. A satisfactory report was also read from the agents (Capt. Tregay and G. Johns), who reported the lode in the bottom level worth 5000 per fathom, and who said the geological position of the mine could not be surpassed. It was in immediate continuity to some of the richest mines in the district, and was on the same lodes and traversed by the same cross-courses, which had never yet failed. They expressed themselves confident that success was certain to follow a judicious development of the mine, and contemplated greatly increasing the returns of tin forthwith.

CARN BREA.—At the meeting on Oct. 26 the accounts for the four months showed a loss of 29560, 12s. 3d., increasing the debit balance to 36100, 5s. 7d. The Chairman, Mr. W. Teague, explained that although it might have been thought he ought to have taken power for making a call, he did not do so because they felt almost certain that during the next four months the prospects of the mine would warrant their paying costs, and perhaps doing a little better as well. Should they, however, fail to do so, they at the next meeting must be prepared to pay a call. The reason why they hoped to do better was owing to the completion of Highborough shaft, and the taking up of the levels to be driven. These levels presented a very fair prospect indeed. They hoped to have the most from the eastern one, but the western one had at present a better appearance than they had reason for calculating when they commenced driving. That end was going back towards the winze spoken of at their last meeting, and, although very little had been done in it, they were now again resuming work there. In another part it looked as though they were entering tin ground, and the lode had very much changed in appearance. They had every prospect so far as they could judge that they were going to do better.

WHEAL UNY.—At the meeting on Oct. 26 the accounts showed a loss on the 16 weeks' working of 7390, 18s. 8d., and a total debit balance of 32927, 17s. 6d. In the course of the discussion as to whether a call ought to be made, the Chairman, Mr. Dingle, said that after talking to Capt. Hamley and others, he did not see there was any necessity to make a call. With improved prospects in the mine he thought that at the next meeting they would be in a much better position. It was decided that an engine lying idle on the mine should be advertised for sale; also the salary of Capt. Hamley should be increased from 10 to 12 guineas a month, and that of the other agents by one guinea a month. The services of the former were spoken of in the highest possible appreciation.

METALWORKERS' HANDBOOK.—The thoroughly practical and useful character of Mr. H. Schubert's Hand- und Hilfsbuch für Metallarbeiter—Vienna: A. Hartleben's Verlag, Wallfischgasse—and its excellent printing and illustrations have been noticed in the Mining Journal from time to time whilst the parts have been in course of issue, and now that the publication is complete it may be said that the high quality of the work has been maintained throughout. The last five numbers just issued have beautifully executed chromo-lithographs of an improved gas motor of metal ornamentation &c., the work being rendered complete by a title page and very full index. The value of the volume to practical men will be inestimable, and it is in every respect worthy of a place in all technical libraries. Mr. Schubert has brought together a vast amount of information in a very small space, and the publication of it at so low a price as about 8s. places it within the reach of all likely to profit from the study of it.

HOLLOWAY'S PILLS.—This medicine has resisted every test which time, prejudice, and vested interest could impose upon it, and it is at length triumphant as the most reliable remedy for those derangements of the system so common at the change of seasons. When the air grows cooler, and the functions of the skin are retarded, an occasional dose of Holloway's pills will call on the liver and kidneys for greater activity, and compensate the system for diminished cutaneous action. As alternatives, aperients, and tonics these pills have no equal. To every aged and delicate person whose appetite is defective, digestion impaired, and tone of health low, this medicine will be a precious boon conferring both ease and strength.

## Registration of New Companies.

The following joint-stock companies have been duly registered—

**"THE BAY OF ABOUKIR" STEAMSHIP COMPANY (Limited).**—Capital 45,000*l.*, in shares of 100*l.* The purchasing, owning, and working said steamer. The subscribers (who take one share each) are—E. Tyrwhitt, 1c, King-street; H. G. Lanyon, 6, Essex-street; H. C. Burder, Manchester; J. H. Macmillan, Manchester; J. N. Pearce, Liskeard; W. M. Long, Manchester; T. N. Taylor, Liverpool.

**THE MAUNLICHER REPEATING RIFLE COMPANY (Limited).**—Capital 50,000*l.*, in shares of 10*l.* The working, selling, and otherwise dealing in certain patented inventions. The subscribers (who take one share each) are—W. J. Adams, 35, Queen Victoria-street; E. F. Gye, 31, Montague-place; J. F. S. Curtius, 174, New Bond-street; A. Hughes, 33, Chancery-lane; S. Slater, 32, Queen Victoria-street; A. L. Sacré, 60, Queen Victoria-street; F. F. Whitehurst, Putney.

**HART AND COMPANY (Limited).**—Capital 5000*l.*, in shares of 20*l.* The manufacture and sale, wholesale and retail, of ribbons, scarfs, and other silk and cotton textile fabrics at Bedford and Coventry. The subscribers are—J. Cash, Coventry, 38; B. Lee, Coventry, 15; F. B. Adams, Wolverhampton, 14; E. Green, Fells Mill, 15; W. S. Booth, Coventry, 12; T. Clarke, Coventry, 3; J. Riley, Bedford, 8.

**THE "HARKAWAY" STEAMSHIP COMPANY (Limited).**—Capital 13,000*l.*, in shares of 100*l.* The purchasing, owning, and working said steamship. The subscribers (who take one share each) are—W. Mead, 5, New London-street; J. Fossey, 16, Water-lane; W. Sawyer, 5, New London-street; H. P. E. Burm, 29, Mark-lane; T. Rowland, 271, Burdett-road; J. Weatherley, 5, Dunstan Buildings; J. Harrison, 66, Mark-lane.

**THE "GRATITUDE" STEAMSHIP COMPANY (Limited).**—Capital 28,000*l.*, in shares of 400*l.* A shipowners' business in all branches. The subscribers are—H. H. Bothamley, 13, Queen-street, 1; G. R. Briggs, 22, Great St. Helen's, 2; Count de Torre Dia, 41, Moorgate-street, 1; F. M. Hall Dare, Army and Navy Club, 2; C. Livingstone, 22, Great St. Helen's, 1; E. W. Morgan, 3, Fenchurch Buildings, 1; R. G. Bothamley, 3, Fenchurch Buildings, 1.

**THE CETINE MANUFACTURING COMPANY (Limited).**—Capital 5000*l.*, in shares of 1*l.* To manufacture, sell, and deal in cetine, and any substance in connection therewith. The subscribers (who take one share each) are—W. Arbuthnot, 13, York-road; W. H. Beaumont, 22, Conduit-street; F. Hill, Union Club; C. G. Meyne, Torrington-square; E. L. Dwyer, 51, Torrington-square; T. P. Powell, 49, Palace Gardens-terrace; W. M. Harris, 7, Holly-place.

**THE CARDIFF AUCTION AND STORAGE COMPANY (Limited).**—Capital 20,000*l.*, in shares of 20*l.* To acquire and carry on an established business at Cardiff. The subscribers (who take five shares each) are—A. Thomas, Cardiff; M. Morgan, Cardiff; W. H. Martin, Cardiff; S. Stowe, Cardiff; D. Jones, Cardiff; G. B. Dyer, Cardiff; S. Cooper, Penarth.

**JOHN SHARP AND COMPANY (Limited).**—Capital 25,000*l.*, in shares of 5*l.* To purchase and continue a bottle manufacturing business. The subscribers (who take one share each) are—G. Snell, 4, Austin Friars; H. Slater, 66, Finsbury Pavement; J. Sharp, 1A, Oval, Hackney; R. C. Snell, 48, St. Petersburg-place; A. R. Gray, 37, Buckingham-road; B. Gerald, 36, Malvern-road; W. W. Willis, 146, Finborough-road.

**THE ASHBURTON SLATE QUARRIES (Limited).**—Capital 10,000*l.*, in shares of 1*l.* The acquisition of a leasehold estate situate in the parish of Woodland, Devonshire, and also the buildings, engines, machinery, plant, tools, and other effects, for the purpose of carrying on all operations of a quarrying company. The subscribers (who take one share each) are—T. H. Wilson, South Kensington; F. C. Phillips, 42, Gillingham-street; A. W. C. Cooté, Torquay; G. Drake, Torquay; R. Douglas, Torquay; G. H. Halls, Torquay; C. E. Rivers, Torquay.

**THE MORTHOE HOTEL COMPANY (Limited).**—Capital 15,000*l.*, in shares of 10*l.* Erecting and maintaining a hotel, shops, and other buildings in a town in Devonshire. The subscribers (who take 10 shares each) are—J. Harper, Barnstaple; W. Gould, Barnstaple; E. Dennis, Barnstaple; L. Binnay, Barnstaple; S. Goss, Barnstaple; W. O. Smith, Barnstaple; J. R. Chanter, Barnstaple.

**HORACE WOODWARD AND COMPANY (Limited).**—Capital 30,000*l.*, in shares of 20*l.* To purchase or otherwise acquire the business of an electro-plate manufacturer and silversmith at the Atlas Works, Paradise-street, Birmingham. The subscribers are—W. Woodward, Edgbaston, 25; G. J. Johnson, Birmingham, 10; S. Mitchell, Birmingham, 1; F. W. V. Mitchell, Edgbaston, 90; E. B. Finley, Edgbaston, 10; H. Mitchell, Birmingham; H. Taylor, Edgbaston, 10.

**"SALERNO" STEAMSHIP COMPANY (Limited).**—Capital 25,000*l.*, in shares of 100*l.* The business of a shipowner in all branches. The subscribers (who take one share each) are—T. Smithers, 9, Gracechurch-street; S. Sunder, 9, Gracechurch-street; J. Smithers, 9, Gracechurch-street; H. Langridge, 16, Great St. Helen's; J. Darby, 1, Church-court; J. J. Darby, 1, Church-court; W. Smith, 106, Leadenhall-street.

**THE ALEXANDRA DRAPERY COMPANY (Limited).**—Capital 20,000*l.*, in shares of 10*l.* To acquire and carry on a silk mercer's, linen, and general draper's business, &c., established at Cambridge. The subscribers (who take one share each) are—J. Gazzard, Cambridge; C. Glass, Cambridge; F. Rogers, Cambridge; W. Stephens, Bodmin; W. H. Jackson, Rainham; E. G. Marner, 10, Coleman-street; W. E. Scott, Cambridge.

**THE SERPICO RAILWAY COMPANY (Limited).**—Capital 1,000,000*l.*, in shares of 20*l.* To acquire certain concessions, and to construct, equip, maintain, and work a railway in the Empire of Brazil. The subscribers (who take one share each) are—A. Anglefield, Godstone; D. H. Goodsall, 7, Portland-place; J. R. Pike, 25, Austin Friars; C. A. Edey, 1, Ingleby-road; A. P. Baker, 44, Camden-road; J. C. Gilmore, Brixton; W. J. Stride, 2, Queen-street.

**THE WALLASEY COAL COMPANY (Limited).**—Capital 2000*l.*, in shares of 1*l.* The purchase and sale of coal for house, baker's, and steam purposes. The subscribers (who take one share each) are—H. J. Stainbridge, New Brighton; R. Else, Liskeard; J. Joynson, Liskeard; R. Rawlinson, New Brighton; K. S. Ellis, Egremont; R. Frankland, Seacombe.

**"BADSWORTH" STEAMSHIP COMPANY (Limited).**—Capital 31,000*l.*, in shares of 10*l.* The purchasing, owning, and working of said steamer. The subscribers (who take one share each) are—W. Wheatley, Liverpool; J. Shaw, Pontefract; W. Johnston, Rock Ferry; C. W. Kellock, Gateacre; T. Walker, St. Helen's; W. Bagshaw, Rock Ferry; G. R. Clover, Birkenhead.

**THE ANGLO-AMERICAN LAND MORTGAGE AND AGENCY COMPANY (Limited).**—Capital 500,000*l.*, in shares of 10*l.* The subscribers (who take one share each) are—C. F. Mackintosh, 5, Clarges-street; D. Macpherson, 32, Cornhill; W. H. Rutland, 36, Mark-lane; J. G. Button-Browning, 51, Brook-street; H. Stephenson, 26, Suffolk-street; E. W. Henry, Croydon; J. F. Bennett, 90, Charlotte-street.

**THE HOME COUNTIES BRICK COMPANY (Limited).**—Capital 20,000*l.*, in shares of 1*l.* The business of brickmakers, quarry masters, lime and cement burners, merchants, &c. The subscribers (who take one share each) are—C. Hawke, 6, Upper Vernon-street; R. E. Howard, Catford; J. Ward, 184, Palmerston Buildings; H. Harbord, Nunhead; S. J. Lear, 62, Redcliffe-road; A. Honeybourne, 131, Drummond-street; H. G. Bedford, Lewisham.

**THE SUSSEX DAIRY COMPANY (Limited).**—Capital 10,000*l.*, in shares of 50*l.* each. To purchase and continue at Brighton and elsewhere an established business. The subscribers (who take one share each) are—D. R. Milne, Bournemouth; H. S. Greaves, Oldham; G. Beaumont, Heaton Moor; W. H. Shields, Leeds; G. S. Scott, Gloucester; P. H. Milne, Cambridge; F. W. Biddle, 18, Gresham-street.

**THE SOUTH AFRICAN SYNDICATE COMPANY (Limited).**—Capital 45,000*l.*, in shares of 24*l.* To examine, prospect, and explore farms, lands, mines, minerals, ores, mining rights, and claims in the South African Republic. To investigate and secure the titles, and promote, organise, and register any companies having for their object the acquisition of farms, lands, mines, &c., in South Africa or else-

where. The subscribers (who take one share each) are—S. G. Foot, 50, Flanders-road; C. H. Langdon, Anerley; G. Robertson, Haxwell, 12, Queen Victoria-street; T. Earle, City Club; W. Dennis, 232, Blackfriars-road; A. Edmiston, Jun., Wood Green; A. Cooper, 60, Wrotham-road.

**THE MARITIME EXHIBITION AND AGENCY COMPANY (Limited).**—Capital 20,000*l.*, in shares of 5*l.* To establish and carry on a maritime exhibition, agency, and exchange, &c. The subscribers (who take one share each) are—H. Lamb, Hove; W. C. J. Blount, Thornton Heath; J. Walsh, 33, New Broad-street; J. Knox, 33, New Broad-street; F. Oram, 20, Manor-road; J. H. Tucker, 28, Fenchurch-street; C. S. C. Watkins, 46, Queen Victoria-street.

## NEW CHLORINATION PROCESS.

For the extraction of metals from their ores chlorination processes have for some time passed ranked amongst the most important, and the modification in the method of conducting the operation now introduced by Mr. N. F. EVANS, of Philadelphia, will probably lead to its still more general adoption. The improvement consists essentially in the use of chlorine gas under sufficient pressure to accelerate its action in reducing the metals to the form of chlorides, and in recovering the unused or uncombined gas from the ore undiluted, and in the same condition as when it entered the chlorinator. The process of course necessitates the use of special apparatus. In the ordinary or Plattner's process of chlorination the chlorine gas is used under a normal pressure or one just sufficient to cause it to flow into the chlorinator, and the time required for the most perfect reduction is 48 hours, while Mr. Evans effects the same reduction in one hour, or even less. Retaining the gas for 48 hours in the presence of water converts nearly, or quite, all of it into chlorhydric acid, and if any of it remains it is so diluted with air that its further use is impracticable. The short time and the low temperature at which the gas and ore brought into contact in the chlorination, according to this invention, prevent the formation of chlorhydric acid, and as the air is exhausted from the chlorination before the introduction of the chlorine it is recovered in an undiluted condition.

In practice Mr. Evans provides a chlorine gas generator, which may be of any of the common forms, and a gasometer for storing gas from the generator, and that which has been recovered from the chlorinator, it being connected to the generator by pipes and to the chlorinator by other pipes. He employs a chlorinator which is in the form of a barrel, which is arranged to revolve, and supported on trunnions and driven by a pulley and a goose neck, is passed through one of the trunnions into the open space above the charge; a pump is connected to the gasometer by the pipes and to the chlorinator by other pipes and the goose neck. He, moreover, provides a receiver for storing gas under pressure which is connected to the pump by pipes and to the chlorinator by other pipes and the goose neck. An exhaust apparatus is used, which may be a pump, water column, or any suitable contrivance, it being connected to the chlorinator by a pipe and the goose neck, and to the receiver by other pipes. There are cocks or valves to connect or disconnect the different parts of the apparatus.

The mode of procedure in conducting the process need not in every case be identical; but it will suffice to describe two which answer quite well in practice. The gasometer being put in order for holding the gas, the generator is then charged with the necessary materials in the proper amounts for generating chlorine gas, which, passing through the pipes, fills the gasometer. Con-

tion is then made between the exhaust and the receiver from which the air is exhausted, after which the connection is closed and connection made between the receiver and the pump, which is then connected with the gasometer and started, pumping the gas from the gasometer into the receiver until a pressure of 50 or 60 lbs. is obtained in the receiver. The chlorinator is then charged nearly full of ore and water leaving only the point or opening in the goose neck not submerged, and it is made to revolve at about the rate of 20 revolutions per minute. Connection is now made between the exhaust and the chlorinator through a pipe and goose neck, and all air exhausted from the chlorinator; this connection is then closed, and the one between the chlorinator and receiver opened, when the gas from it passes into the chlorinator, subjecting the ore in it to a strong pressure. After the ore has been under the gas for one hour or less, according to its nature, connection between the receiver and chlorinator is closed, and it is connected to the gasometer, when the greater portion of the gas passes into it. The chlorinator is now connected to the pump, and any gas remaining in the chlorinator is pumped into the receiver until the chlorinator is exhausted. The ore and water are then discharged from the chlorinator, which is then ready for another charge. After chloridising, the ore is filtered and the gold precipitated and collected in the usual way.

In working the process according to the second method the chlorinator is charged with ore and water as before. Into it is then put a proper proportion of chloride of lime, the whole being thoroughly incorporated by rotating the chlorinator. The rotation is then discontinued, and dilute sulphuric acid is now added to the mixture and the tank is again rotated, when there is produced a large excess of chlorine under pressure, by the chlorine gas being evolved from the chloride of lime by the sulphuric acid, sulphate of lime being formed and chlorine thrown off.

The rotation continues from one half hour to three hours, according to the nature of the ore, when the chlorination is complete. Rotation during the chlorination has the effect of expediting the chemical reaction involved. The chlorinator is now tapped, and the excess of chlorine is drawn off into a gasometer, or in the absence of the gasometer, which (with the pump, generator, and receiver may be dispensed with by this method) may be conducted by any suitable device, away into the air. The free chlorine remaining in the chlorinator having been expelled in the usual way the chlorinator is emptied into a proper vessel, and the metallic chlorides collected as usual.

**SOCIETY OF ENGINEERS.**—The paper to be read on Monday next is by Mr. Carl Pieper, on Ice Machines and Refrigerators; in it will be considered—how refrigeration is caused, at what cost, and by what technical appliances; comparison of the results obtained therefrom; ice and ice-water making; the applicability of a compound air pump for that object, and its use for numerous industrial purposes.

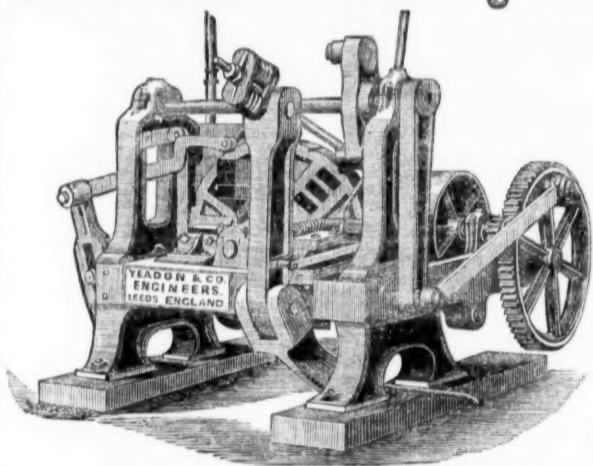
**CORNISH PUMP-ENGINES.**—The number of pumping-engines reported for September is 14. They have consumed 1611 tons of coal, and lifted 11·2 million tons of water 10 fms. high. The average duty of the whole is, therefore, 46,700,000 lbs. lifted 1 ft. high by the consumption of 112 lbs. of coal. The following engines have exceeded the average duty:—

Dolcoath—65 in.	Millions	58·3
West Isaset—Thames's 60 in.		47·7
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West Wheal Seton—Harvey's 85 in.		62·0
West Wheal Seton—Rule's 70 in.		55·8

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These Machines utilise small coal or coke by making it into Briquettes or blocks compressed fuel at the rate of 36,000 per day. The cost of preparing, mixing, and making is under One Shilling per ton. The Briquettes sell readily for Locomotives, Household, or other purposes. Full particulars on application to

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## TESTIMONIALS

Messrs. Yeadon and Co., Leeds. **HARBONNAGE DE BERNISSART, PRES PERUWELZ (BELGIUM), JANUARY 4TH, 1878.**  
I continue to be perfectly satisfied with the work performed by the two patent Briquette Machines as well as with that of the Steam Engine, Mixer, &c., which you supplied a few months ago for the manufacture of compressed slack Briquettes, and that I can recommend them as being the best machines I know of, after having carefully studied all the Briquette Machines constructed at home and abroad.

**SOCIETE DES CHARBONNAGES REUNIS DU RIEU DU CŒUR ET DE LA BOULE. QUAREGNON (BELGIUM), SEPTEMBER 13TH, 1879**  
Messrs. Yeadon and Co., Leeds.  
We are entirely satisfied with the erection and working of the two Briquette Machines, as well as the Steam Engine and Mixing Apparatus.

Messrs. Yeadon and Co., Leeds. **CHARBONNAGE DE BERNISSART, PRES PERUWELZ, JANUARY 24TH, 1879**  
I continue to be highly satisfied with the Briquette Machines which you supplied in 1877. They do their work very well, and produce the Briquettes very regularly, and of a good quality.

Messrs. Yeadon and Co. **SOCIETE HOULLIERE DE VENDIN-LEX-BETHUNE, PAS-DE-CALAIS, DECEMBER 2ND, 1880.**  
I have the honour to inform you that the Briquette Machines work very well. The Briquettes are very well made. I am highly satisfied with your workmen, who have done their work very well.

The undersigned, Civil Engineer of Mines, Chevalier of the Legion of Honor, Consulting Engineer to the Mines de Vendin-lexto, Bethune, Pas-de-Calais, certifies that the Briquette Machinery for making Briquettes of Coal, supplied by Messrs. Yeadon and Co. to the above Company is working to their entire satisfaction.

Lille, December 28, 1880.

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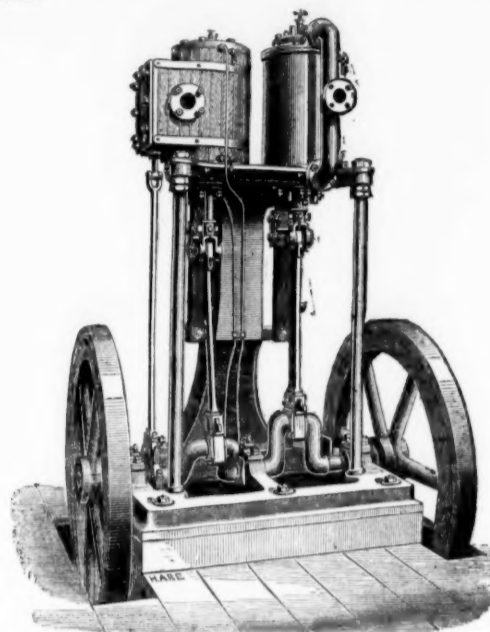
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 thought consumptive, and from a puny ailing boy he seems to be fast growing  
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I am Sir, yours truly,

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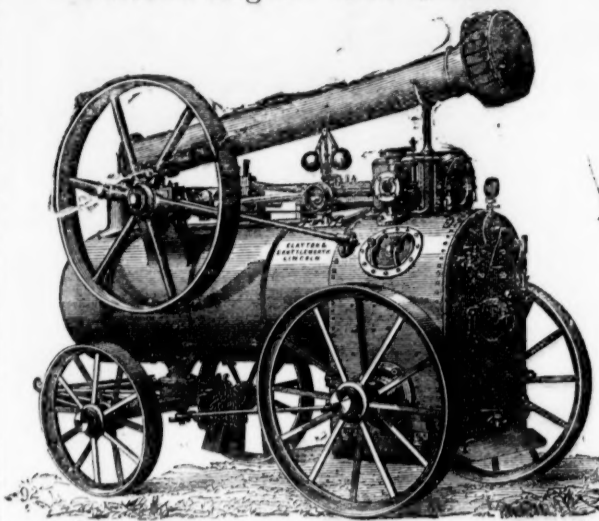
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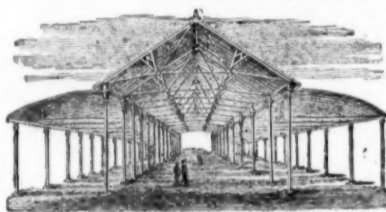
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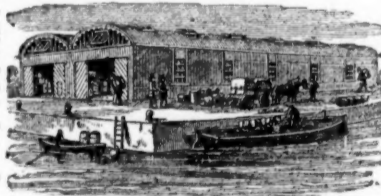
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Special Polishing Machinery and Materials.

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For depositing **Steel or Nickel** upon **Copper Electrotypes,** to protect the surfaces from the action of Mercurial Inks, and at the same time preserving the clear brilliancy of vermilion, and other colours having mercury in their composition.

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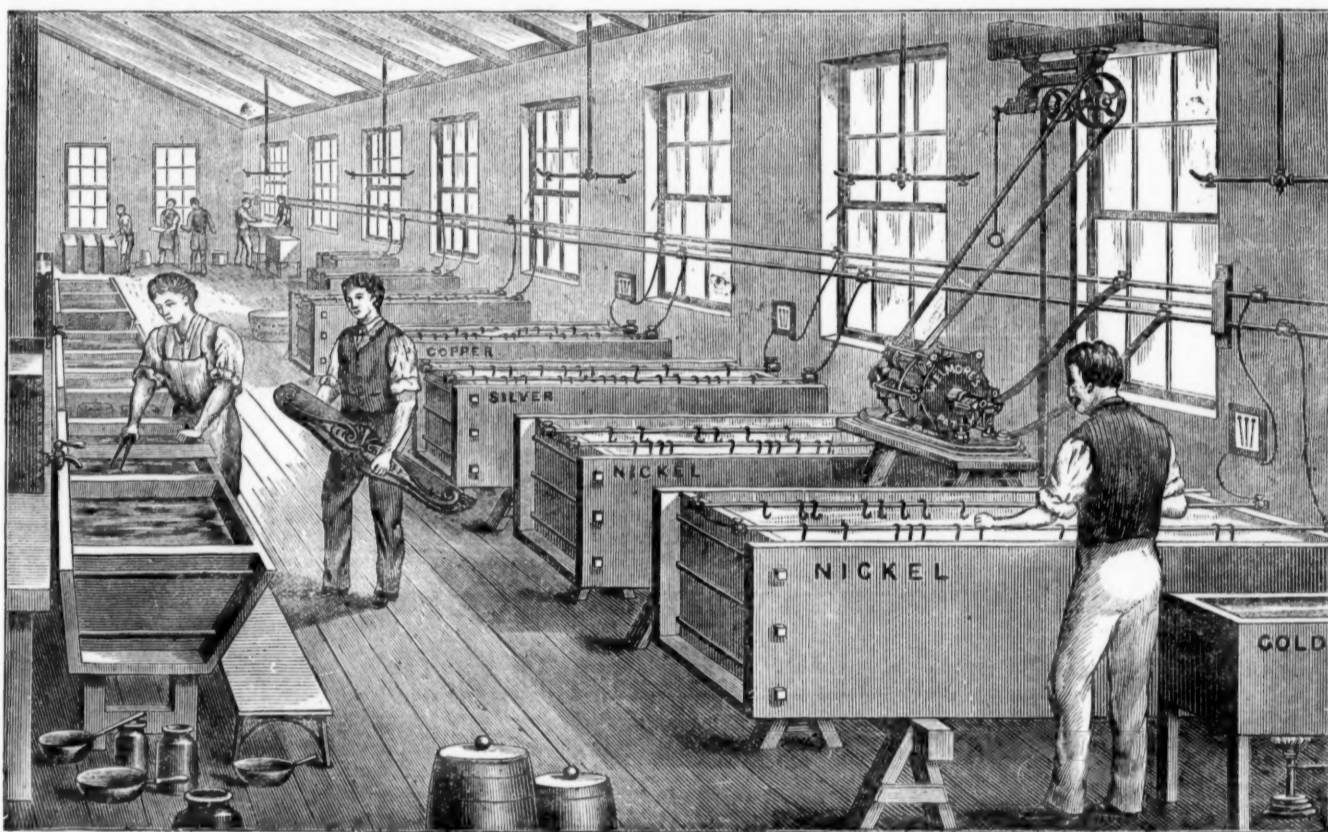
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## TESTIMONIALS, &amp;c.

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"Mr. WILLIAM ELMORE, of 91, Blackfriars Road, London, S.E., is busily engaged fitting up the Art Metal Depositing Works of the Electrolytic Company, Charlotte Street, Blackfriars. The Electro-plating tanks of nickel, copper, brass, zinc, and tin, holding several thousands of gallons each (worked by an 'Elmore' Patent Dynamo-Electric Machine, capable of depositing about 500 lbs. of metal per day), and the specially designed and constructed polishing machinery will all combine to constitute this most gigantic and complete arrangement of the kind in the world. Here boiler tubes, each over 20 ft. in length, may be coated with copper, large ornamental iron lamp posts, and similar massive iron structural objects of great weight may be covered with electro-deposited copper, forming, when finished, a complete shell of bronze, which may be nickel-plated, or even silver-plated, if desired. Large rough or polished surfaces may be coated with brass, or zinc, or tin. Copper electrotype copies are taken of art subjects, the reproduction being so perfect that the process is used for multiplying plates from which bank-notes are printed, and the most delicate ferns, flowers, leaves, and insects are coated with copper, and afterwards with gold, silver, nickel, &c., for use as ornaments of various kinds. Fenders, fire-irons, grates, &c., may be brassed. The largest marine engines may be nickel-plated in the large nickel-plating plant, worked by the powerful 'Elmore' machine with ease and certainty, which only a few months since would have been pronounced almost impossible. The Electrolytic Company, we understand, express perfect satisfaction with the work already completed by Mr. Elmore, and there is no doubt that with that gentleman's large practical experience the company could not have been in better hands. The entire premises will be lighted by the 'Elmore' system of electric light."

From the "LONDON MINING JOURNAL."

"The new 'Elmore' Dynamo-Electric Machine can be seen in operation in London, and is considered one of the most wonderful scientific apparatus which has yet been brought before the public; it should be inspected by all who are interested in any kind of metallurgical operations."

"Mr. ELMORE has just received two pieces of ordnance from Her Majesty's Works at Chatham, with an order to nickel-plate the same, together with the carriages upon which they are mounted. Mr. Elmore has done similar work for the Government on previous occasions, and it will be remembered that the screw propellers used on the torpedo boats were nickel-plated by him. The 'Elmore' Dynamo-Electric Machines and complete electro-plating outfits have been supplied to Government Departments at home and abroad."

From the NICKEL PLATING COMPANY, 13, GREEK STREET, SOHO.  
Your Machine does its work most satisfactorily, and has never once reversed current, which the Weston Machine frequently did."

From the ELECTROLYTIC COMPANY,  
ART METAL DEPOSITING WORKS,  
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From the NICKEL AND SILVER PLATING WORKS,  
2, CHARLES STREET, CURTAIN ROAD, E.C.

"Having had one of the 'Elmore' Patent Dynamo-Electric Machines in constant use for several months, it gives me great pleasure to say that with it I have been able to deposit four times the weight of metal per day which I had been enabled to do with the Dynamo-Electric Machine, which it has displaced in my establishment."

From the LONDON NICKEL PLATING COMPANY.

"We have much pleasure in expressing our entire satisfaction with the nickel-plating solution, anodes, and Dynamo Machine that you have supplied us with."

From the DYNAMO-ELECTRIC PLATING WORKS.

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"The quality of the nickel solutions and anodes at these works, which were supplied by you, is most satisfactory in every way. The Dynamo Machine also works excellently, and has given no trouble whatever since it has been started."

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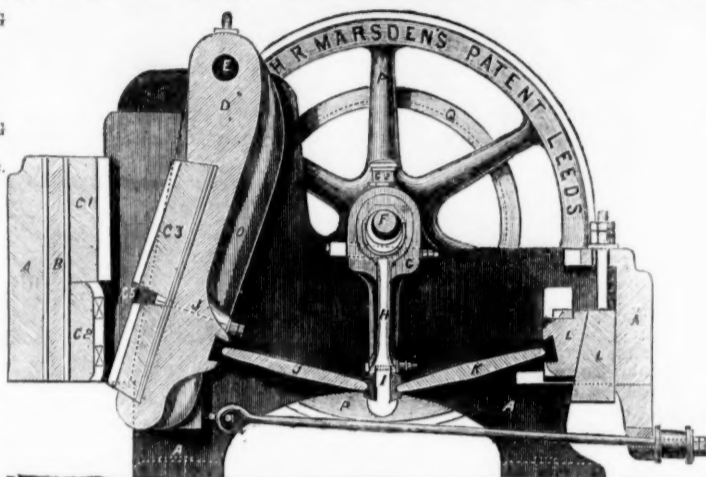
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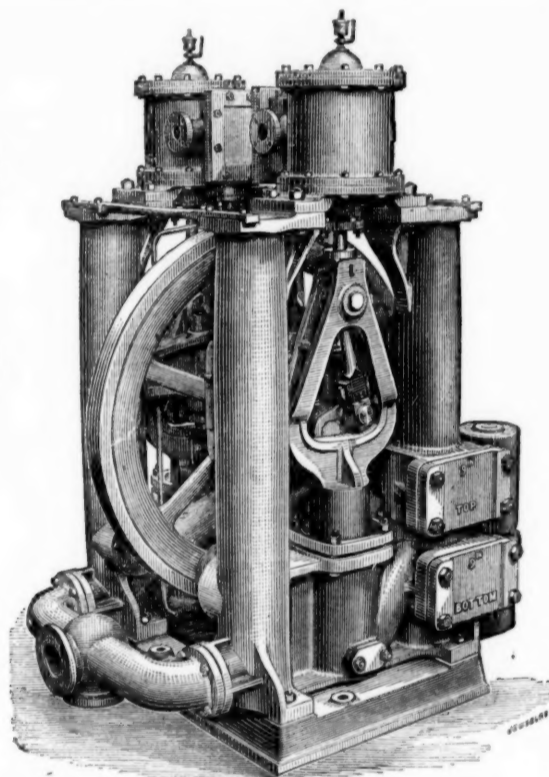
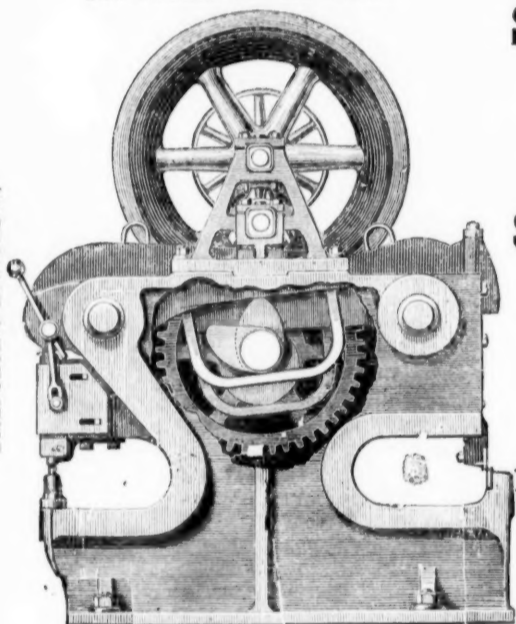
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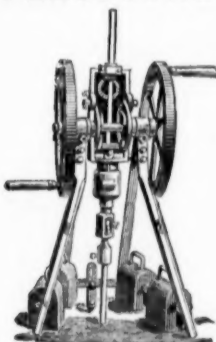
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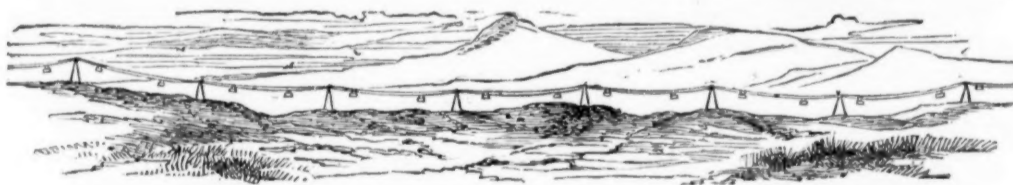
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